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Assessment of Training Noise Impacts on the Red-cockaded Woodpecker: 1999 Results

by David K. Delaney, Larry L. Pater, Timothy J. Hayden, Linton Swindell, Tim Beaty, Larry Carlile, and Eric Spadgenske

May 2000

Construction Engineering Research Laboratory

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Executive Summary

This report is submitted as partial fulfillment of the terms of the Strategic Environmental Research and Development Program (SERDP)-funded project CS-1083. The purpose of this research is to assess the effects of military training noise on the endangered Red-cockaded Woodpecker (RCW) and to develop assessment methodology. The results of this research will provide a scientific basis for RCW management protocols, and will partially satisfy requirements of a 1996 U.S. Fish and Wildlife Service (USFWS) biological opinion that requires the Army to assess effects of implementing the 1996 "Management Guidelines for the RCW on Army Installations." These new guidelines significantly reduce restrictions on training for military installations on which RCWs are present. These installations include Fort Stewart, GA; Fort Bragg, NC; Fort Benning, GA; Fort Polk, LA; Fort Gordon, GA; Fort Jackson, SC; Camp Lajeune, NC; Eglin Air Force Base (AFB), FL; and Camp Blanding, FL. This research is being conducted jointly by the U.S. Army Construction Engineering Research Laboratory (CERL), an element of the U.S. Army Engineer Research and Development Center (ERDC); Fort Stewart, and the U.S. Army Forces Command (FORSCOM). The project was developed by CERL in coordination with FORSCOM, the USFWS RCW Recovery Coordinator and Region 4 office, the Fort Stewart Director of Training, the Fort Stewart Department of Public Works (DPW) Fish and Wildlife Branch, and the Army Threatened and Endangered Species (TES) User Group.

During this second year of the study, we experimentally tested RCW response to controlled military training noise events under realistic conditions, namely .50-caliber blank fire and artillery simulators. We measured both proximate response behavior and nesting success, while continuing to measure baseline behavioral data from undisturbed sites. Measured levels of experimental noise did not affect RCW nesting success or productivity. RCW flush response was shown to increase as stimulus distance decreased, regardless of stimulus type. Woodpeckers returned to their nests relatively quickly after being flushed. Noise levels within RCW nest cavities were substantially louder than levels recorded at the base of the tree. It is important to note that the data collected to this point are sufficient to confirm statistical power to make strong conclusions or to establish reliable noise dose-response relationships or thresholds. The data collected to this point are sufficient to confirm that the project technical approach is appropriate and that the research objectives will be achieved.

Foreword

This study was conducted for the Strategic Environmental Research and Development Program (SERDP) under an FY98 Conservation Project, No. CS-1083, "Assessment of Training Noise Impacts on the Red-cockaded Woodpecker." The technical monitor was Dr. Robert Holst.

The work was performed by the Ecological Processes Branch (CN-N) of the Installations Division (CN), Construction Engineering Research Laboratory (CERL) in cooperation with Jones Technologies, Inc. The CERL Principal Investigator was Dr. Larry L. Pater. The technical editor was Gloria J. Wienke. Steve Hodapp is Chief, CEERD-CN-N, and Dr. John T. Bandy is Chief, CEERD-CN. The Acting Director of CERL is Dr. Alan W. Moore.

CERL is an element of the U.S. Army Engineer Research and Development Center (ERDC), U.S. Army Corps of Engineers. The Acting Director of ERDC is Dr. Lewis E. Link and the Commander is COL Robin R. Cababa, EN.

This work could not have been accomplished without the very able field assistance of (alphabetical) Tim Brewton, Michelle Huffman, Margaret Klich, Ronald Knopik, Brian Platt, Aaron Rinker, and Andrew Walde. We particularly appreciate the skill, support, and cooperation of the 10th Engineer Battalion; the 3rd Battalion, 7th Infantry; and the 3rd Squadron, 7th Cavalry for providing personnel, equipment, and supplies to assist us in conducting our experimental trials. We thank the Director of Training Office on Fort Stewart, particularly Howard Bullard, Tony Tellames, and Joe Caligiure for logistical support and close cooperation in the day-to-day operation of this study. We would also like to thank Linton Swindell and his staff at the Department of Public Works Fish and Wildlife Office for all their assistance during this project.

Contents

List of Figures and Tables

Figures

Tables

1 Introduction

Background

The Endangered Species Act requires that all Federal agencies carry out programs to conserve threatened and endangered species (TES) and to evaluate the impacts of Federal activities on listed species (Scott et al. 1994). TES management on military installations, particularly that involving the Red-cockaded Woodpecker (RCW), has raised questions about the interaction between Army training and the conservation of Red-cockaded Woodpeckers on military lands. The goal of RCW management on Fort Stewart is to recover the population while eliminating conflicts with the training mission by eliminating the need for training restrictions (Fort Stewart Endangered Species Management Planning [ESMP] Team 1998). A brief summary of legal requirements is presented in Appendix A. Because noise management has traditionally focused on minimizing human annoyance, loud activities have often been relocated to sparsely populated areas where wildlife resides. This has led to increased interactions between military activity and wildlife (Holland 1991). Increasing importance has been placed on determining the extent of noise impacts on wildlife (Bowles 1995), especially threatened and endangered species (Delaney et al. 1999; Pater et al. 1999).

The Red-cockaded Woodpecker (*Picoides borealis*) is an endangered species that inhabits mature, open pine forests of the southeastern United States (Figure 1; Jackson 1994). Historically, RCW populations were distributed throughout the South from eastern Texas to the Atlantic coast, and north to New Jersey (Jackson 1987). The distribution has been reduced with the extirpation of RCWs from New Jersey (Lawrence 1867), Missouri (Cunningham 1946 as cited in Jackson 1987), and most recently Maryland (Devlin et al. 1980). The majority of RCWs are currently restricted to public lands, namely National Forests, military installations, and National Wildlife Refuges (Jackson 1978, Lennartz et al. 1983). Military installations, in particular, are gaining recognition as a valuable resource in the recovery of TES (Jordan et al. 1995). It has been estimated that nearly a quarter of the remaining RCWs are located on nine military installations in the southeast (Costa 1992), which includes the Fort Stewart population. Such a close association has led to increased conflicts between TES conservation

requirements and the military's mission of maintaining a high degree of combat readiness (Jordan et al. 1995).

Figure 1. Adult Red-cockaded Woodpecker delivering prey to the nest.

In 1984 the Army initially established a 200-ft (61-m) buffer zone around all RCW cavity trees to protect nesting habitat and identify RCW management units. In 1996, the Department of the Army (DA) issued revised guidelines for the management of RCWs on military lands, to reduce training restrictions, and increase adaptive management of the RCW and its habitat. These guidelines are scheduled to go in to effect by early 2000. Under the revised guidelines, certain transient military activities are permitted within 50 ft (15 m) of RCW cavity trees. These include: (1) military vehicle and personnel travel, including armor; (2) .50-caliber machine gun blank fire and 7.62-mm blank fire and below; (3) artillery/hand grenade simulators and Hoffman type devices; (4) hand digging of hasty individual fighting positions; (5) use of smoke grenades and star cluster/parachute flares; and (6) smoke and haze operation (see Hayden 1997 for a more detailed description of past and current Army guidelines for RCWs). A 1996 USFWS biological opinion requires the Army to assess effects due to implementing the 1996 guidelines (Jordan et al. 1997). The current project will provide an important aspect of this required assessment.

The Fort Stewart Fish and Wildlife Directorate prepared an Endangered Species Management Plan (Fort Stewart ESMP Team 1998) for the installation that detailed changes under these revised guidelines: (1) consideration will be given jointly to training mission requirements and RCW biological requirements when implementing ESMP; (2) reduction in off-limit area for thru-cluster maneuver traffic around cluster trees from 200 ft (61 m) to 50 ft (15 m); and (3) the types of training activities allowed within RCW clusters will be expanded.

Objectives

The primary research objective of this multiyear study is to determine the impact of certain types of training noise on the endangered Red-cockaded Woodpecker. This will require that we develop dose-response threshold relationships for quantifying RCW responses to noise levels and stimulus distances, and relate these to nesting success. A second objective is to develop and disseminate cost-effective techniques for documenting the effects of training noise on TES populations. These techniques include the capability to characterize noise stimuli, to document behavioral responses, and to determine resulting population effects due to military noise. Achieving these objectives will provide a means to manage impact on both military training capability and TES, and will provide a factual basis for mitigation and management protocols and guidelines. This research directly addresses the #1 Army Conservation Pillar User Requirement, which is concerned with impacts of military operations on threatened and endangered species. The results of this research will partially satisfy requirements of the 1996 USFWS biological opinion (Jordan et al. 1997) that requires the Army to assess effects due to implementing the 1996 "Management Guidelines for the RCW on Army Installations."

Approach

Chapter 3 presents details of the technical approach used in this research. The chapter includes discussions of the study area, cluster selection, impact measures, response protocols, nesting success, video surveillance, sound instrumentation and recording, sound metrics, and statistical analysis.

Scope

All aspects of the research plan were reviewed and approved by the USFWS and Fort Stewart before monitoring activity began. Results from this research apply

directly to Fort Stewart, but may also be applicable to other installations in the southeastern United States where RCWs are exposed to similar noise. This study will use population data collected at Fort Stewart and other installations under a Forces Command (FORSCOM) program. Specific evaluation of impact of maneuver training activities is being conducted under a separate coordinated research effort. Training noise sources examined during this study include artillery simulators, .50-caliber blank fire, large-caliber live fire, small-arms live fire, grenade simulators, and helicopter flights. RCW response to other military activity, such as vehicle noise associated with maneuver training, aircraft overflights, and Multiple Launch Rocket System (MLRS) fire, will be documented opportunistically, but is not of high priority in this study.

Mode of Technology Transfer

Products of this research will be provided directly to the Military Services for use during consultation with the USFWS and for development of management protocols. This aspect of the transition plan will directly help to alleviate impacts on military training capability and will provide information to the military that will guide effective management of impacts on endangered species populations. Other technology transfer methods will include technical papers and journal articles and TES and noise workshops. The information will also be disseminated through the Environmental Noise Program Office of the U.S. Army Center for Health Promotion and Preventive Medicine, the Army TES User Group, and the U.S. Air Force (USAF) International Bibliography on Noise (IBON). Other forums for dissemination include the North Atlantic Treaty Organization (NATO) Committee for Challenges to Modern Society (CCMS) subcommittees for noise effects, the International Committee on the Biological Effects of Noise (ICBEN), the Acoustical Society of America Animal Bioacoustics technical committee, and the Department of Defense (DoD) Committee on Environmental Noise.

2 Literature Review

Noise disturbance studies have often been anecdotal and fail to quantitatively measure either the stimulus or the behavioral response related to the animal's fitness. Predictive models for the relationship between disturbance dosage and quantifiable effects are even more scarce (Awbrey and Bowles 1990; Grubb and King 1991; Grubb and Bowerman 1997). Although many types of human disturbance have been reported as affecting birds (Fyfe and Olendorff 1976), very little research has addressed the effects of human activity on woodpeckers, especially the endangered Red-cockaded Woodpecker (Charbonneau et al. 1983; Jackson 1983; Beaty 1986; Jackson and Parris 1995; The Nature Conservancy [TNC] 1996; Pater et al. 1999).

Few researchers have directly compared differences in bird responsiveness between aerial and ground-based disturbances (Bowles et al. 1990). Studies that have examined the effects of aircraft activity on nesting birds (e.g., Platt 1977; Windsor 1977; Ellis 1981; Anderson et al. 1989) have often noted a slight but nonsignificant decrease in nesting success and productivity for disturbed versus undisturbed nests. Anderson et al. (1989) noted a slight decline in the nesting success of experimental Red-tailed Hawk (*Buteo jamaicensis*) nests versus control nests (80 percent experimental versus 86 percent control success) after helicopter disturbances.

In contrast, ground-based disturbances appear to have a greater effect than aerial disturbances on the nesting success of some bird species. In their classification tree model of Bald Eagle (*Haliaeetus leucocephalus*) responses to various anthropogenic disturbances, Grubb and King (1991) determined that Bald Eagles in Arizona showed the highest response frequency and severity of response toward ground-based disturbances, followed by aquatic, and lastly by aerial disturbances. Delaney et al. (1999) reported similar findings for Mexican Spotted Owl (*Strix occidentalis lucida*) response to military helicopter activity and chain saws, observing that chain saws elicited a greater flush response rate than helicopters at comparable distances and noise levels.

A bird's behavior during the nesting season is an important determinant of its ultimate nesting success or failure (Hohman 1986). Various bird species have been reported to abandon their nests after being exposed to ground-based and

aerial disturbances. White and Thurow (1985) reported that approximately 30 percent of Ferruginous Hawks (*Buteo regalis*) abandoned their nests after being exposed to various ground-based disturbances, but there were no controls for comparison. Anderson et al. (1989) reported that 2 of 29 Red-tailed Hawk nests were abandoned after being flushed by helicopter flights, compared with 0 of 12 control nests. Ellis et al. (1991) found only 1 of 19 Prairie Falcon (*Falco mexicanus*) nests were abandoned when exposed to frequent low-altitude jet flights during the nesting season (no control sites used). Platt (1977) reported similar rates with only 1 of 11 Gyrfalcon (*F. rusticolus*) nests failing (reportedly due to snow damage), compared with 0 of 12 control nests. Of the 6 Peregrine Falcon (*F. Peregrinus*) nests exposed to helicopter flights, only 1 was abandoned (also apparently due to inclement weather) compared with 0 of 3 control sites (Windsor 1977).

Birds may be more susceptible to disturbance-caused nest abandonment early in the nesting season, possibly because parents have less energy invested in the nesting process (Knight and Temple 1986). Some animals appear reluctant to leave the nest later in the nesting season (Anderson et al. 1989; Ellis et al. 1991; Delaney et al. 1999). Steenhof and Kochert (1982) reported that Golden Eagles (*Aquila chrysaetos*) and Red-tailed Hawks exposed to human intrusions during early incubation had significantly lower nesting success than individuals exposed later in the season (45 percent success for Golden Eagles and 57 percent for Red-tailed Hawks within experimental groups versus 71 percent and 74 percent success with control groups, respectively). Although reactions of adult birds at the nest can influence hatching rates and fledgling success (Windsor 1977), flush behavior of adult birds from the nest is poorly quantified (Fraser et al. 1985; Holthuijzen et al. 1990; Delaney et al. 1999). In the few studies that have examined bird responses to specific disturbance types (e.g., aircraft approach distance), flush rates were higher if birds were naive (i.e., not previously exposed; Platt 1977). Some birds are more reluctant to flush off the nest during incubation and early nestling phases than later in the season (Grubb and Bowerman 1997; Delaney et al. 1999). Animal responsiveness has been shown to increase as the nesting season progresses (Grubb and Bowerman 1997). Delaney et al. (1999) found that Mexican Spotted Owls were more responsive to helicopters later in the reproductive cycle, which suggests that adult defensive behavior may decrease as the young mature. In contrast, Holthuijzen et al. (1990) found Prairie Falcon responsiveness to nearby blasting activity decreased as the nesting season progressed.

Few studies have documented the threshold distance that causes birds to flush in response to noise disturbance events. In those studies that reported stimulus distance, it was rare for birds to flush when the stimulus distance was greater

than 60 m (Carrier and Melquist 1976; Edwards et al. 1979; Craig and Craig 1984; Delaney et al. 1999). Similar findings were reported by Carrier and Melquist (1976) for Osprey (*Pandion haliaetus*), and Ellis (1981) for Peregrine Falcons. Many disturbance study reports imply that animal response increases with decreasing stimulus distance (Platt 1977; Grubb and King 1991; McGarigal et al. 1991; Stalmaster and Kaiser 1997), though only a few studies have experimentally tested this relationship (Delaney et al. 1999; Pater et al. 1999). Delaney et al. (1999) found that the proportion of owls flushing in response to a disturbance was strongly and negatively related to stimulus distance and positively related to noise level. Pater et al. (1999) found similar results when they experimentally exposed Red-cockaded Woodpeckers to military training noise.

Even fewer examples are available for noise response thresholds. Snyder et al. (1978) reported that Snail Kites (*Rostrhamus sociabilis*) did not flush even when noise levels were up to 105 decibels, A-weighted (dBA) from commercial jet traffic. This result was qualified by the fact that test birds were living near airports and may have habituated to the noise. Edwards et al. (1979) found a dose-response relationship for flush responses of several species of gallinaceous birds when approach distances were between 30 and 60 m and noise levels approximated 95 dBA. Delaney et al. (1999) reported that Mexican Spotted Owls did not flush during the nesting season when the sound exposure level (SEL) for helicopters was ≤ 92 dBA and the Equivalent Average Sound Level (LEQ) for chain saws was ≤ 46 dBA. Noise response thresholds were fairly comparable with data from the nonnesting season (SEL of 92 dBA for helicopters and LEQ of 51 dBA for chain saws).

Distance has been described as the most commonly used surrogate for noise disturbance in the literature on animal response to noise, and has been proposed to be the best representative for quantifying the relationship between stimulus and response measures (Awbrey and Bowles 1990). The reason appears to be that distance is more conveniently implemented into management practices (i.e., establishing buffer zones) than other variables. However, use of a properly measured noise level as the stimulus measure facilitates broader application of response results, in particular to sources of similar aural character but different acoustic power emission.

3 Technical Approach

Null Hypotheses

Data collection, summary, and statistical analyses to assess and characterize military training noise in RCW clusters, and to evaluate the relationship between noise levels and RCW demographic data, are based on the following formal null hypotheses:

- Ho: There is no difference in the nesting success, productivity, or nesting behavior between disturbed and undisturbed RCW nest sites.
- Ho: There is no relationship between stimulus distance or noise level and RCW response behavior.
- Ho: There is no difference in RCW response between types of training activities.

Study Area

Fort Stewart is located in southeast Georgia (Figure 2), within Liberty, Long, Bryon, Tattnall, and Evans counties, and is the largest Army Installation east of the Mississippi River. Physiographically, this area lies within the Atlantic Coastal Flatwoods Province, within a humid, semi-tropical latitude, and averages 50 in. (127 cm) of rain per year. The average temperature in January is 62 °F (44 °C) with a relative humidity of 70 percent, while July averages 91 °F (32 °C) with a relative humidity of 76 percent. Approximately 66 percent of the 112,745 ha of the installation are terrestrial and cover three main forest types: upland pine stands composed primarily of longleaf (*Pinus palustris*), loblolly (*P. taeda*), and slash pine (*P. elliottii*); mixed pine-hardwood sites; and hardwood stands. The remaining habitats include various wetland types and open water (Fort Stewart ESMP Team 1998).

The primary mission of Fort Stewart is training and operational readiness of the 3rd Infantry Division (Mech.) and other nondivision units. The 3rd Infantry Division (previously the 24th) was activated in 1975 and redesignated as a mechanized division in 1979 (Hayden 1997). Training activities are conducted year-round at Fort Stewart to maintain a combat ready fighting force. The installa-

tion also supports training of regional National Guard and Reserve units, as well as joint training exercises with troops from other installations and DoD Branches (Fort Stewart ESMP Team 1998).

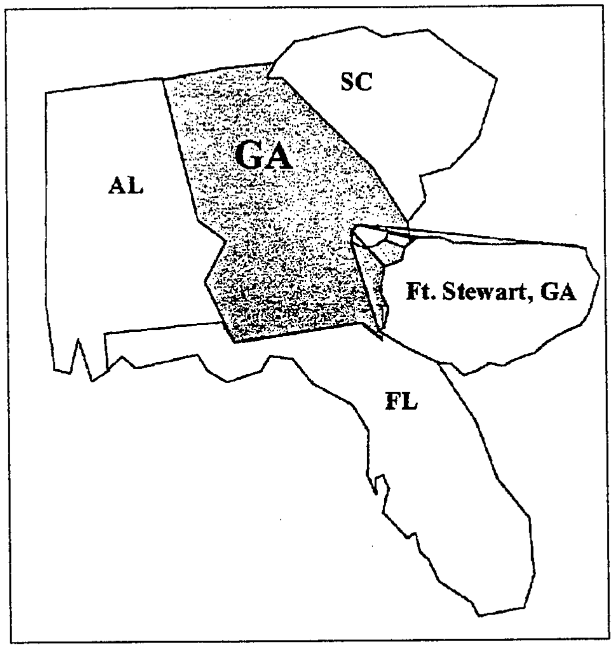

Figure 2. Location of Fort Stewart within the state of Georgia.

Fort Stewart contains a variety of impact and firing areas (Figure 3). The central feature of the installation is the Artillery Impact Area (AIA; about 5,200 ha), which is surrounded by dozens of artillery firing points varying in distance from a few hundred meters to thousands of meters from the impact area. On the western border of the AIA is the Red Cloud Multipurpose Range Complex (MPRC) containing eight separate ranges. Just south of the AIA is the Explosive Ordnance Disposal Area (EOD), the Demolition Area (DEMO), and the Small Arms Impact Area (13 live-fire ranges, about 2,300 ha). To the east and northeast of the AIA are the Calfax and Luzon Ranges, and three smaller Aerial Gunnery Ranges (AGRs). There are also seven drop zones located throughout the installation (Hayden 1997).

Sample Cluster Selection

There are 294 known RCW clusters distributed across Fort Stewart (Figure 3). None are known to be in the AIA because this area has not been surveyed due to safety concerns. Of the approximately 165 reproductively active (mated pair present) RCW clusters in 1999, we chose 48 sample clusters for experimentation during the second field season. This was a substantial increase over 1998 for

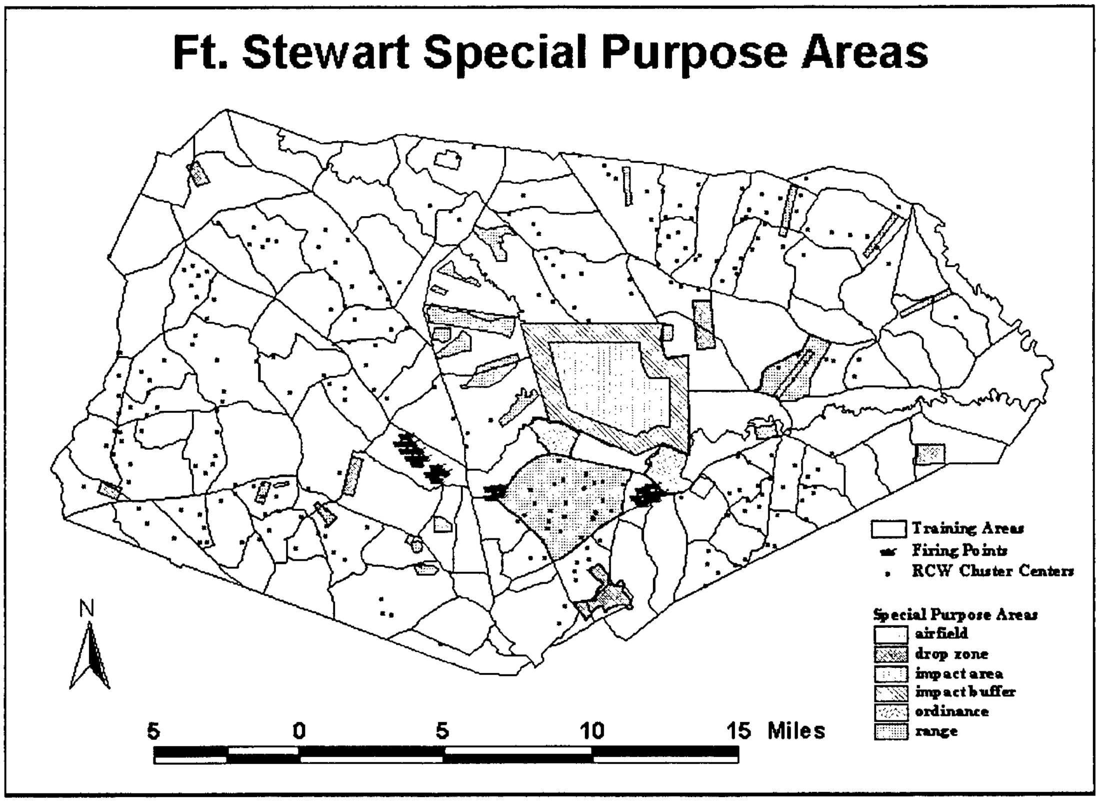

Figure 3. Locations of training areas and RCW clusters on Fort Stewart.

which we were able to collect experimental data at only four sample clusters (Pater et al. 1999). We intend to use these same clusters insofar as practical throughout this multiyear study. We classified clusters according to type and level of training noise, based on the number, distance, and noise levels of stimulus events that each cluster typically receives. Three types of sample sites were chosen: passive disturbed, undisturbed, and experimental. "Passive disturbed" sites were those sites that received potentially significant noise disturbance as part of normal training operations; we had no direct control over time, number, or level of noise events at these sites. Noise types include large-caliber live fire, small arms live fire, grenade and artillery simulators, and helicopter flights. We attempted to choose sites that received predominantly one type of noise, but this was sometimes impossible if we were to also use the highest noise level clusters. "Undisturbed" or "low disturbance" sites (the two terms are equivalent and are used interchangeably in this report) are sites where noise levels were judged likely to be consistently low or absent for all of the noise types. At these sites we observed behavior and measured success as a baseline for judging impact at disturbed sites. It is likely that at least some level of military noise of some type can be perceived at every RCW cluster on Fort Stewart. Our criterion for low disturbance is noise levels at or near ambient noise levels. At "experimental" sites we exposed birds to either artillery simulators (Figure 4) or .50-caliber blank fire (Figure 5) under controlled conditions at distances of 15.2, 30.5, 61,

76.2, 91.5, 122, and 244 m from the nest tree (Appendix B, Tables B1 and B2). Not all distances were tested for each noise source because bird response dictated which distances would be used for developing a distance-response threshold. The experimental sites were chosen from among cluster sites that had low to moderately low disturbance levels. This implies that birds at these sites were not habituated to the noise stimulus. Sample size was limited by the number of clusters that fit each of the foregoing selection protocol criteria and by available field observation resources.

Figure 4. Artillery simulator blast.

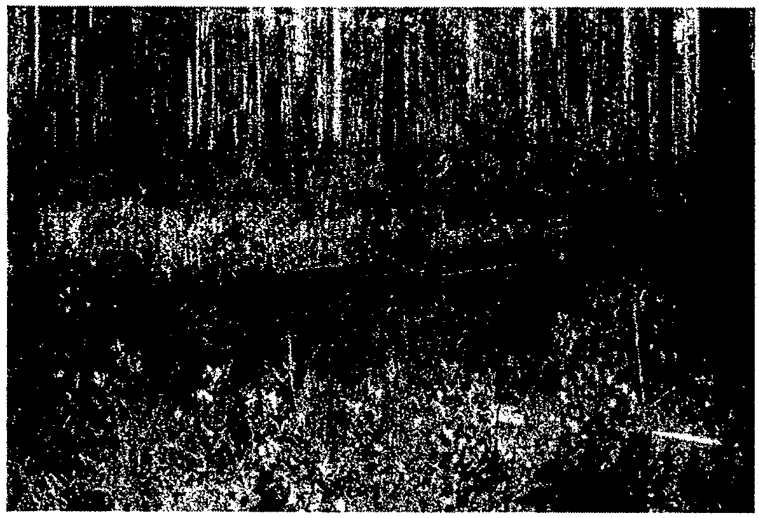

Figure 5. .50-caliber machine gun.

Impact Measures

Selection of noise impact criteria is a critical issue. For humans the response criterion is typically annoyance. For domesticated species the issue may be damage to individual animals or impacts on profits. For TES, the ultimate concern is long-term survival of the species. The challenge is to develop a relatively short-term procedure for inferring impact on long-term survival. The conceptual approach used in this study is depicted in Figure 6. First, proximate responses to the noise stimulus are measured. A proximate response is the direct and immediate response of the animal to the stimulus; for example a behavioral (e.g., flight) or a physiological (e.g., change in heart rate) response. This tracks with the first regulatory decision criterion of the Endangered Species Act (ESA), that is, whether the action or activity "may affect" the species. Next, we examine whether the stimulus that elicited the proximate response affects "individual fitness," which is typically evaluated in terms of adult and juvenile mortality or

reduced nesting success. Mortality and nesting success are established by field monitoring of many individuals throughout the nesting season. This level of effect tracks with the next decision criterion of the ESA, namely whether the action or activity is "likely to jeopardize the continued existence" of the species. Population effects will be inferred from measures of individual fitness by application of population viability analysis (PVA) models. Current applications of PVA do not capture the temporal and spatial variability of training events, and thus cannot model the resulting effects on endangered species' demographic parameters. Researchers at the Engineer Research and Development Center, Construction Engineering Research Laboratory (ERDC/CERL) currently are developing PVA modeling approaches capable of capturing training effects in predictive population models. This is a shared effort under this project and a related ERDC/CERL research effort to evaluate effects of maneuver training (vehicles and troops) on RCWs.

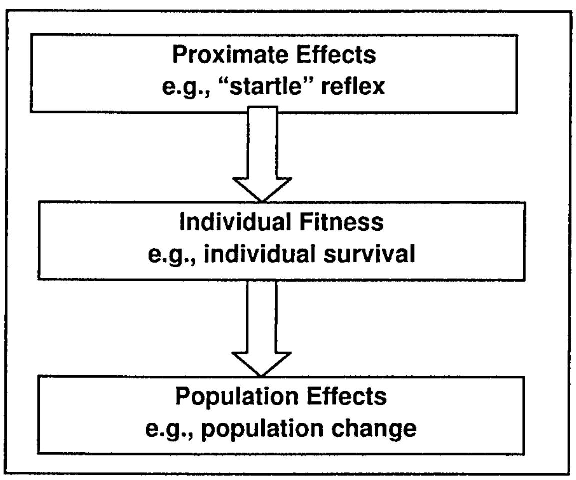

Figure 6. Assessment hierarchy for training impact on threatened and endangered

In summary, the research paradigm is that proximate effects can be linked to individual fitness, which in turn can be linked to population effects. As a specific example, consider that a bird might flush from a nest (a proximate response) in response to a noise event. It is possible that this could lead to failure of the nest, especially if the noise and flush response occurred repeatedly. Monitoring is required to determine nesting success of disturbed and undisturbed nests. A population model is required to determine if such failure of some percentage of nests has an effect on survival of the population.

Behavior and Proximate Response Measurement Protocols

We documented woodpecker behavior at low and high noise disturbance nest sites by direct observation (camouflaged blinds more than 30 m from the nest) and through video surveillance. We divided the nesting cycle into three stages: incubation (eggs present 0 to 11 days), brooding (small chicks attended by adults: days 12 through 22), and nestling (larger chicks typically unattended in nest: day 23 until fledging). A "data session" consisted of behavioral observations of at least one adult RCW, typically for 1 hour or longer. At disturbed sites we attempted to observe behavior for some period of time before and after each noise event. This was sometimes not possible at passive disturbed sites because noise events were so frequent that we could not document undisturbed behavior for extended periods of time.

To evaluate RCW baseline behavior and responses to military training activities, we measured several parameters:

1. Alert — RCW moves to the cavity mouth, head movements, orient to noise source;
2. Flush from nest — RCW departs from the nest in response to the stimulus, and remains away from the nest for a measured period of time;
3. Recovery time — length of time an adult is away from the nest after being flushed;
4. Nest attentiveness — proportion of time that the adults spend on the nest through the nesting season (calculated for diurnal, 24-hour periods, and for each nesting phase);
5. Prey deliveries — number and rate of prey deliveries to the nest;
6. Trips — number and duration of times the attending adult left the nest.

RCW behavior categories 4 through 6 will be presented in a future report after the data have been fully analyzed.

Demographic and Nesting Success Data

RCW demographic data (population size, growth, density, and distribution) were collected in accordance with established protocols used by the Fish and Wildlife Branch DPW on Fort Stewart. Demographic data included the following parameters for each cluster:

1. Cluster occupancy — cluster occupied by one or more RCWs. Most individuals are identified by unique leg band combinations (provides a measure of population size, growth, and stability);
2. Mated status — presence of both an adult male and an adult female RCW;
3. Active nest — at least one egg was laid;
4. Nesting success — at least one fledgling was produced (provides a measure of the proportion of RCW clusters that are reproductively successful);
5. Nesting productivity — number of young fledged per nest (provides a measure of fecundity);
6. Number of eggs produced;
7. Number of nestlings hatched;
8. Group size — (provides a possible measure of territory quality and availability).

These data enable several trends to be detected:

1. Reproductive loss — mortality rate of eggs, nestlings, and fledglings during nesting;
2. Annual nest reoccupancy rates — provides a potential measure of RCW response to disturbance. Sites with heavy disturbance levels may be abandoned in subsequent years in favor of other sites further from specific disturbances;
3. Site tenacity — turnover rate of adult and helper RCWs within a cluster site across years;
4. Nesting success rates at disturbed and undisturbed sites;
5. Mean number of young fledged at disturbed and undisturbed sites;
6. Mean clutch and brood size at disturbed and undisturbed sites;
7. Reproductive potential — total number of young that could be produced if all eggs and nestlings survived to fledge successfully.

Most of the demographic data for Red-cockaded Woodpecker clusters was collected by DPW Fish and Wildlife personnel from Fort Stewart. Each active (at least one RCW present) cluster was initially visited to determine the cluster occupancy. Adult RCWs were banded to determine group size and affiliation using methods similar to Walters et al. (1988). A 25 percent random sample of all RCW clusters were then monitored approximately every 7 to 9 days to record clutch and brood size. Nestlings were uniquely color banded approximately 5 to 10 days after hatching. Clusters were visited 20 to 25 days after nestlings were banded to determine the number and sex of fledglings (Walters et al. 1988). The 25 percent sample included many of our sample clusters. We augmented the DPW Fish and Wildlife sample by monitoring demographic data (particularly the number of young fledged) for additional cluster sites to provide more complete coverage of our sample clusters.

Video Surveillance

Video cameras are being used as a means to record RCW behavior over prolonged periods, to reduce costs, and to avoid potentially disruptive effects of human presence. The camera systems can also be used to document response in areas that cannot be safely monitored (e.g., downrange from firing positions). Cameras were attached to tree trunks with adjustable, jointed angle-brackets and screws. Cameras were mounted at the same level or slightly above nest height in the nearest practical tree and at least 5 m from the nest tree so as not to disturb incubating woodpeckers. Power and coaxial cables were covered with camouflaged cloth and were attached to a 10.5-cm, DC (direct current) monitor and battery so camera placement could be directed from the base of the camera tree. At least two people are required for camera placement: a climber to position the camera and a person on the ground to check the video signal and placement. Then, a trunk line is attached at the base of the tree (covered by a camouflaged 1.2-cm diameter hose for protection against rodents), allowing the power/recording station to be placed 60 m from the tree to minimize potential disturbance to the woodpeckers. We put the recorder, twin batteries, and all connectors inside a weatherproof bin concealed under a camouflaged tarpaulin. Freshly recharged batteries are used for each set of recordings. We used charge-coupled device (CCD) video-board cameras (both black and white and color) to document RCW behavior at 8 nest sites during the 1999 nesting season. The solid state, 12-volt, flexible circuit-board black and white cameras were equipped with 12.0-mm lenses, while the color cameras had 75-mm lenses. The cameras provide a minimum of 380 lines of resolution and have a minimum sensitivity of 0.45 Lux. Black and white cameras are mounted in waterproof heavy-gauge plastic switch boxes with transparent covers (12.9 x 6.7 x 4.1 cm) which, except for the lens and LED (light-emitting diode) area, are painted black. Color cameras were housed in metal weatherproof containers. Two ports are threaded into the protective housing: one for the power supply and the second for the video signal (Delaney, Grubb, and Garcelon 1998). Panasonic Model AG-1070DC Professional/ Industrial VHS video recorders, connected to cameras via coaxial cable (RG-59), provided approximately 24 hours of coverage per tape. These 12-volt, DC-powered recorders were designed for surveillance applications. Cameras and video recorders are powered by two 12-volt, 33.0-amp-hour, Power-Sonic Model PS-12330 sealed rechargeable batteries connected in parallel (a 24-hour taping would draw a single battery below operational limits). These "gel-cell" type batteries (weighing 11.3 kg each) reduce the risk of battery damage, and eliminate the potential for spillage during backpack transport.

Sound Instrumentation and Recording

Sony TCD-D7, Digital Audio Tape (DAT) recorders were used to continuously record all noise events, along with the exact time and date. We attached Bruel & Kjaer (B&K) Type 4149 1.3-cm Condenser Microphones with 7.5-cm wind screens to B&K Model 2639 Preamplifiers, mounting the microphone on a 1-m stick, and placing the unit directly under a woodpecker's nest about 1-m from the tree trunk. The power supply and DAT recorder were also placed at the base of the nest tree in a small camouflaged container. A 1.0-kHz, 94-dB calibration signal (20 micropascals reference) from a B&K Type 4250 Sound Level Calibrating System was recorded before and after each noise event recording. This signal provides a reference for sound levels and spectra when data are later analyzed using a B&K Type 2144 Frequency Analyzer. All noise data were analyzed at ERDC/ CERL. In addition to recording noise levels at the base of the nest tree, we also recorded noise levels within nest cavities during the postnesting season and at nonnesting sites.

Sound Metrics

Noise is defined as sound that is undesirable or constitutes an unwarranted disturbance, and can alter behavior or normal functioning (ANSI S1.1-1994). The types of military noise that are within the scope of this study vary widely in instantaneous transient amplitude, duration, spectral energy content, and suddenness of onset. Appropriate noise metrics and frequency weighting are essential to adequately quantify noise impact for each type of noise. Noise metrics are chosen to measure the noise dose in a way that meaningfully correlates with subject response. Frequency weighting is an algorithm of frequency-dependent attenuation that simulates the hearing sensitivity and range of the study subjects. Frequency weighting discriminates against sound that, while easily measured, is not heard by the study subjects. The current project requires specialized metrics and techniques to meaningfully measure noise impacts on animals. Our paradigm is to measure noise events in terms of unweighted one-third-octave-band levels, apply frequency weighting to the resultant spectra, and calculated appropriate overall metrics.

Only noise that is audible to the study species should be accounted for in the metric used to quantify noise level. Frequency weighting designed for humans may not be appropriate for animal species. The commonly used "A" frequency weighting (ANSI S1.4-1983) attenuates noise energy according to human hearing range and sensitivity. For human response to blast noise, "C" frequency weighting is often applied to received blast noise signals, rather than "A" weighting

which is more representative of human hearing response (ANSI S1.4-1983). This is done to retain low frequency energy that, while not heard by humans, causes a secondary rattle in buildings which does evoke response (ANSI S12.4-1986). This is not appropriate for wildlife. An audiogram, which describes hearing range and sensitivity, provides guidance regarding appropriate frequency weighting for the species of interest and also aids in interpretation of noise response data. Figure 7 shows a composite average audiogram of seven orders of birds, with an approximate representation of a human audiogram and the "A" weighting curve included for comparison. The differences are substantial. The "owl" audiogram further illustrates how audiograms can vary among species. We searched the literature and consulted several leading experts on bird hearing without finding an audiogram for the RCW or for any species in RCW's order, *Piciformes*. Thus, as part of this project we will obtain an audiogram that will be used to develop a frequency weighting function that is appropriate for woodpeckers. Information on the current RCW audiogram work can be found in Pater et al. (1999). It is well-established (ANSI S12.40-1990; S12.9-1996; S12.17-1996; Homans 1974; NAS 1977, 1981; Rice 1983; Rice et al. 1986; Schomer et al. 1994) that the appropriate metric for blast noise is SEL, which is essentially the time integral of the square of the acoustic pressure. We measured blast noise as unweighted 1/3-octave band SEL, to which frequency weighting appropriate for the RCW will be applied (when available from the audiogram portion of this study, described in Appendix B) to obtain appropriately weighted overall levels. The same metric and procedure was also used with small arms noise (Buchta 1990; Hede and Bullen 1982; Hoffman et al. 1985; Luz 1982; Sorenson and Magnusson 1979; Vos 1995). Two metrics, the SEL and the maximum 1-second equivalent average (LEQ) level, were used for helicopter noise, airplane noise, and vehicle pass-by noise, since both are meaningful in terms of correlation with response (Environmental Protection Agency [EPA] 1974, 1982; Federal Interagency Committee on Urban Noise [FICUN] 1980; Fidell et al. 1991; Schomer 1994; Schultz 1978; U.S. Code of Federal Regulations 1980). Ambient noise was measured as LEQ for various appropriate time periods (EPA 1982). In all cases, the noise signals were recorded on digital audio tapes and preserved for possible further analysis.

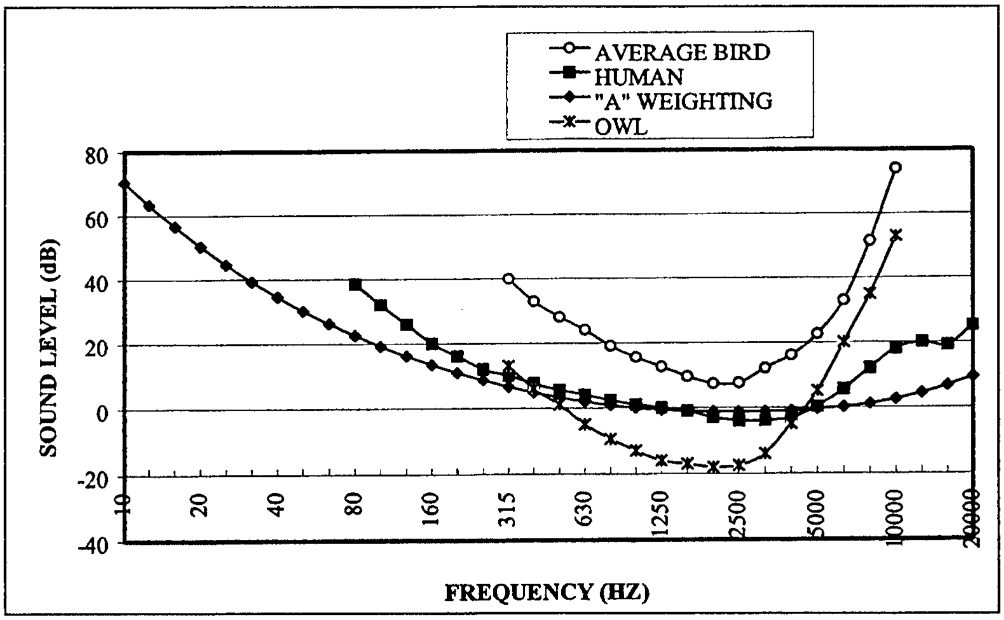

Figure 7. Examples of audiograms and frequency weighting.

Statistical Data Analysis

We used SPSS 8.0 for Windows (SPSS Inc. 1998) to perform all descriptive statistics; for example, one-way ANOVA for comparing the mean number of eggs, nestlings, and young fledged between the first through third nesting attempts. Independent sample *t*-tests were used to compare nest productivity data between experimental and control sites. Whenever appropriate, multiple observations at single nests were averaged before inferential tests were performed so that the sample sizes are the number of nests examined. We used a one-tailed Fisher Exact Test to assess 2x2 contingency tables for variability in nesting success between disturbed and undisturbed nest sites (Zar 1984). Alpha levels of 0.05 will be required to reject a null hypothesis for all tests. Means ± standard error (SE) are presented throughout this document.

4 Results

Initiation Dates for each Nesting Phase

The first woodpecker clutches were initiated on approximately 13 April through 16 May, while secondary clutches (clusters that renested after initial nest failure) were initiated on 3 May through 14 June. Third clutches were initiated on 16 May through 23. Eggs from initial nesting attempts hatched on approximately 23 April through 26 May, while nests from second nesting attempts hatched on 13 May through 24 June. Third nesting attempts hatched on approximately 5 June through 3 July. We observed young fledging from initial nesting attempts on 22 May through 21 June, and from 8 June through 20 July for fledglings from secondary nesting attempts. Third nesting attempts fledged on approximately 21 June through 9 July.

Overall Population Dynamics

Of the 198 potential breeding pairs on Fort Stewart, 165 nested during the 1999 nesting season (83.3 percent). This was a 20 percent increase over the number of potential breeding pairs (165) and a 17 percent increase in the number of clusters that nested (141) on Fort Stewart in 1998. Of the clusters that nested, 86.1 percent fledged young successfully. Thirty-three of the 47 clusters that initially failed to nest were found renesting within the following 2 weeks, with 72.7 percent of these sites successfully fledging young. Clusters that renested were found to be as successful (Fisher Exact Test, $P = 0.15$; 72.7 percent for sites that renested versus 70.2 percent for initial nesting attempts) and productive as sites that nested only once. We observed no statistically significant difference in number of eggs ($F_{2,200} = 0.98$, $P = 0.38$), nestlings ($F_{2,202} = 0.64$, $P = 0.53$), or the number of young fledged ($F_{2,199} = 1.20$, $P = 0.30$) between sites that renested and those that nested only once. We then pooled these data to determine mean rates for the overall population. Mean clutch size for RCW nests was 2.75 ± 0.07 eggs/nest; mean brood size was 2.22 ± 0.07 nestlings/nest; and the number of young fledged was 1.76 ± 0.08 young/occupied nest (2.04 ± 0.07 young/successful nest). Occupied nests include sites that are successful as well as sites that are not. Successful nests include only those sites that are successful in fledging young. Approximately 290 young fledged from RCW nest sites during 1999, with

53.0 percent of those young being male. There was a 35.9 percent decline in the reproductive potential of RCW nests from the incubation phase to the nestling phase ($P < 0.001$). The decline was not as dramatic from the nestling phase to the fledgling phase (16.9 percent), but was still significant ($P = 0.04$). Overall, we observed a significant decline of 53.2 percent in the reproductive potential from incubation through the fledgling phase ($F_{2,492} = 61.8$, $P < 0.001$). Of the 23 clusters that failed to produce young during 1999, it appears as if at least one site failed due to nest predation by a rat snake (*Elaphe obsoleta*), while a second nest may have been lost to southern flying squirrels (*Glaucomys volans*). In another case, a rat snake was taken by Fort Stewart Fish and Wildlife personnel from a cluster that had produced a second clutch. The snake later passed identification bands for the young of that cluster confirming that it had consumed the nestlings. Two other sites had partial brood loss due to flooding of the nest cavity.

Sample Cluster Population Dynamics

As was the case for the population as a whole, the project sample clusters that renested after initial nest failure were as successful and productive as sites that nested only once. Therefore, data were pooled before determining overall sample group fitness rates. Disturbed and undisturbed nest sites did not differ significantly in the number of eggs ($F_{1,72} = 1.65$, $P = 0.20$), number of nestlings ($F_{1,72} = 3.52$, $P = 0.07$), or number of young fledged ($F_{1,72} = 3.09$, $P = 0.08$). Forty-two of the 48 disturbed RCW nest sites were successful in producing an average of 3.47 ± 0.16 eggs/nest, 2.27 ± 0.16 nestlings/nest, and 1.84 ± 0.16 young/occupied nest (2.14 ± 0.14 young/successful nest), while 23 of 25 undisturbed sites were successful in producing an average of 3.56 ± 0.31 eggs/nest, 2.28 ± 0.17 nestling/nest, and 1.80 ± 0.17 young/occupied nest (1.96 ± 0.15 young/successful nest). The number of disturbed sites that successfully nested was not significantly different from undisturbed sites (Fisher Exact Test, $P > 0.05$). For disturbed sites, 8 of the 48 nesting attempts were second attempts. One disturbed site produced and successfully fledged a second clutch, though experimental testing was only done during the first clutch. For undisturbed sites, 8 of 25 nesting attempts were second attempts. The number of disturbed cluster sites that renested was not significantly different from undisturbed sites (Fisher Exact Test, $P > 0.05$). One undisturbed site attempted to nest for a third time, but did not successfully fledge young. We found no difference in the reproductive success (Fisher Exact Test, $P > 0.05$) or productivity ($F_{1,47} = 2.49$, $P = 0.12$) for RCW cluster sites exposed with artillery simulator blast noise versus sites that received .50-caliber blank fire.

Noise and Response Monitoring Summary

During the 1999 field season we documented RCW response to experimental noise from controlled artillery simulators and .50-caliber blank fire. Passive noise from large-caliber live fire (25-mm M2A2 Bradley Fighting Vehicles, 120-mm M1A1-Tanks, and 155-mm M109 Howitzers), grenade simulators, small-arms live fire (5.56 mm M-16 and Saw, 7.62-mm, and .50-caliber machine guns), and military helicopters was recorded as it occurred. Passive noise was monitored during all nesting phases, while experimental tests were performed only during the incubation and early portions of the brooding phase when adults were present at the nest for extended periods of time.

We made noise measurements and behavioral response observations at a total of 48 experimental and 14 passive sample clusters (9 of the 14 passive sample clusters were also used in experimental testing). Detailed results are described below and are presented in the data tables and figures in Appendices B, C, and D. The tables of Appendix B present summaries of the noise level measurements and RCW responses. A typical spectrum for the most prevalent noise sources is presented in Appendix C. Appendix D presents noise level summaries for each noise stimulus type and detailed noise measurements in terms of one-third-octave-band SEL levels. These are the data to which future adjustments for cavity resonance and woodpecker frequency weighting will be applied to obtain single-number overall noise levels. We also made behavioral observations at a total of 25 undisturbed sample clusters for the purpose of obtaining a baseline against which to judge proximate response at the disturbed clusters.

Passive Monitoring

We recorded 691 passive noise events in 34 data sessions at 14 RCW clusters during the 1999 nesting season. Small-arms live fire events (M-16 rifles) were recorded most frequently, followed by large-caliber live fire events (greater than 20 mm in diameter), helicopters, and grenade simulators. Multiple noise events and stimulus types were usually recorded during each data session. Stimulus type, frequency, and noise level varied for each cluster and are shown in the tables of Appendix B.

Experimental Testing

We conducted 105 experimental tests at 48 cluster sites (24 for each noise type) during the 1999 nesting season (Tables B1 and B2, Appendix B).

Noise Measurement Testing

In addition to recording noise levels at the base of active RCW nest sites, we also measured noise levels in nest cavities before or after the nesting season. Both natural and artificial cavities were tested in 1999. Nest cavities were found to act as sound resonators, emphasizing the 125 to 250-Hz portion of the frequency band, and varying by individual tree. In the examples presented in Figures C1 and C2 (Appendix C), artillery simulators and .50-caliber blank fire events had maximum spectral noise levels 13 and 13.1 dB louder, respectively, inside the nest cavity compared with recordings for the same events measured at the base of the nest tree.

Distance and Noise Level Thresholds for Response

Experimental Tests

Artillery Simulators

As stimulus distance decreased, RCWs flush frequency increased (Figure 8), regardless of stimulus type (Tables B1 and B2). RCWs did not flush when artillery simulator blasts were $\geq$ 244 m away from nest sites and SEL noise levels < 84 dBA (89 dB, unweighted). Only one flush response was documented at a distance of 122 m. RCWs returned to their nests on average within 4.6 minutes after being flushed, while returning no later than 10 minutes overall (Figure 9). Data collection during the 2000 field season will emphasize the distance between 122 and 244 m to better develop the distance and noise thresholds for RCW response, as well as replicate those distances tested during the 1999 season.

.50-Caliber Blank Fire

Similarly, we only recorded one flush response due to .50-caliber blank fire at 122 m. We attempted to test RCW response to .50-caliber blank fire at distances > 122 m, but due to weather and other logistical constraints we were not able to develop a distance-response threshold for the cluster that flushed at 122 m. Data collection during the 2000 field season will emphasize this distance. Blank fire testing consistently elicited higher response rates than artillery simulators at similar distances (Figure 8). At distances $\leq$ 122 m, .50-caliber blank fire elicited a significantly greater flush response (49.1 percent) than comparably distance artillery simulators (31.3 percent; Fisher's Exact Test: $P < 0.05$, Appendix B: Tables B1 and B2).

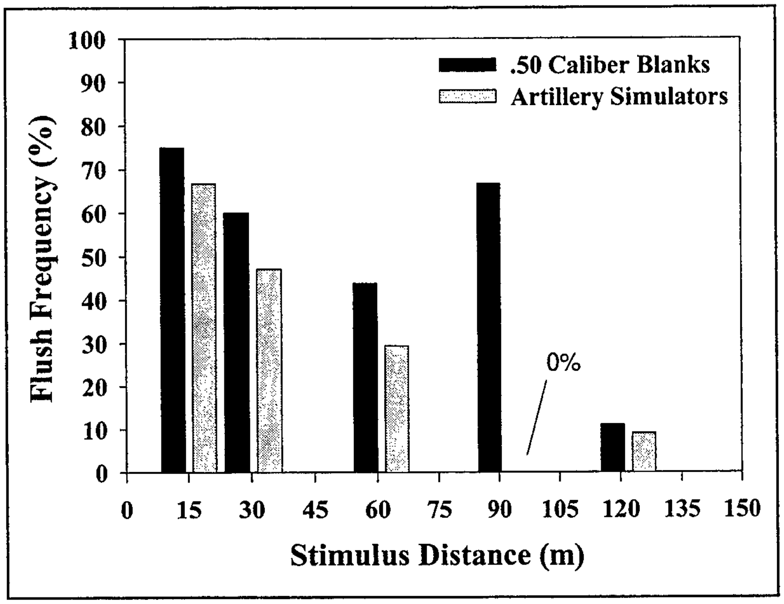

Figure 8. RCW flush frequency by stimulus type and distance.

RCWs flushed only once when .50-caliber blanks were fired at distances of 122 m from nest sites and did not flush when SEL noise levels were < 72 dBA (82 dB, unweighted). Ambient sound levels were substantially lower than experimental noise events during all tests. On average, RCWs returned to their nests within 6.3 minutes after being flushed (within 12 minutes overall; Figure 9). Data collection during the 2000 field season will emphasize areas greater than 122 m to develop the distance and noise thresholds for RCW response, as well as replicate those distances tested during the 1999 season.

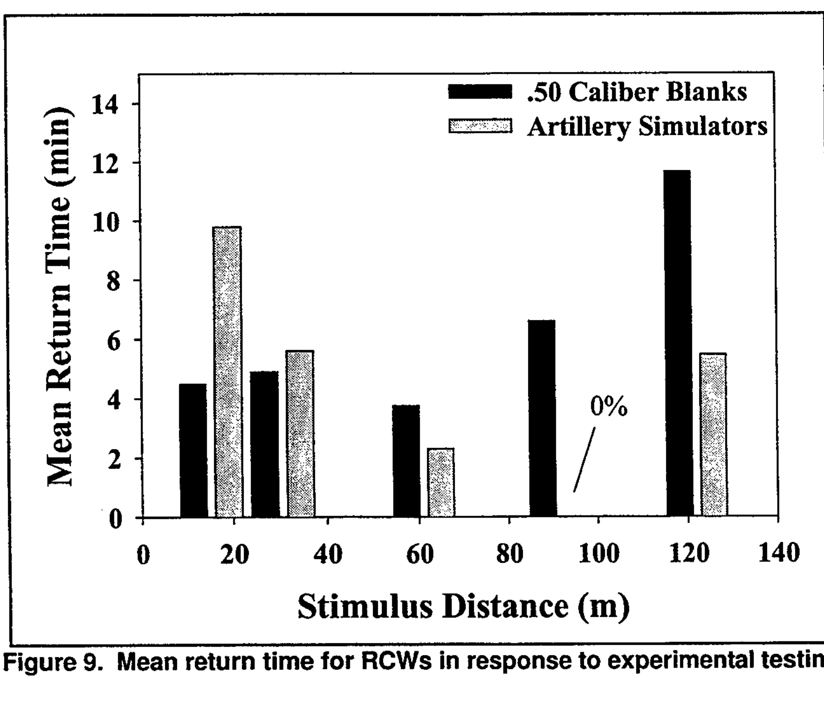

Figure 9. Mean return time for RCWs in response to experimental testing.

Passive Events

Small-Caliber Live Fire

There was only one RCW nest site, cluster 103, that received small-caliber live fire noise at distances less than 400 m. Noise levels at cluster 103 were louder than other clusters due to supersonic bullet noise ("sonic boom") and ricocheting bullets from an M-16 range (Small Arms — Golf) hitting trees in close proximity to the nest tree. The two other clusters monitored for passive noise in the Small Arms Impact Area (clusters 3 and 25) were between ranges and much further downrange than cluster 103 and therefore received lower noise levels. These sites were monitored remotely during firing periods via video camera and audio recording equipment.

RCWs did not appear to flush in response to small-caliber noise at cluster 103, but their flight activities may have been influenced. On 3 separate days, over a 6-day period, RCWs were only observed arriving and departing from the nest during inactive periods at the range (Figures 10 through 12). Data points for Figures 10 through 12 represent individual bullet noise events or groups of muzzle blast events that were separated in time from other shots. Red lines represent times when RCWs returned to the nest and blue lines represent times that birds departed the nest. Noise levels from bullet "sonic booms" and ricocheting bullets were substantially louder than rifle muzzle noise coming from the range (Figure 13). Further analysis will reveal whether the "bullet noise" is due to sonic booms and/or bullets impacting trees. When we compared the frequency spectra for muzzle blast noise versus bullet noise we found that most of the noise energy for muzzle blast noise occurred at 630 Hz, while the bullet noise occurred at higher frequency levels, around 1600 to 2000 Hz. Bullet noise is identified on Figures 10 through 12 by the similarities between the unweighted and "A" weighted noise levels, and account for all data points above 78 dB. "A" weighted noise levels were very close to their corresponding unweighted noise levels. Bullet noise reached levels 30 dB louder than muzzle blast noise within the 1600 to 2000 Hz range and around 15 dB louder when peak levels for both noise events were compared (Figure 13). Bullet noise represented 15.6 percent (102 noise events, Table B3) of the noise events that were documented at cluster 103. Cluster 103 successfully fledged two young in 1999.

Overall, RCWs did not flush when small-arms live fire was more than 400 m from active nest sites and SEL noise levels were < 77 dBA (79 dB, unweighted; Appendix B, Table B3). Small-arms live fire events < 100 m did not represent shots from rifles themselves, but were from bullet noise. We were not able to determine the exact distances that bullets were hitting surrounding trees, but due

termine the exact distances that bullets were hitting surrounding trees, but due to the received noise levels and the fact that we have seen bullets lodged in nearby trees, distances appear to be relatively close. Rifle noise from Small Arms — Golf M-16 range was approximately 430 m from the nest. We did not locate any other active RCW nest sites < 400 m from any small arms ranges to which we had access for testing purposes.

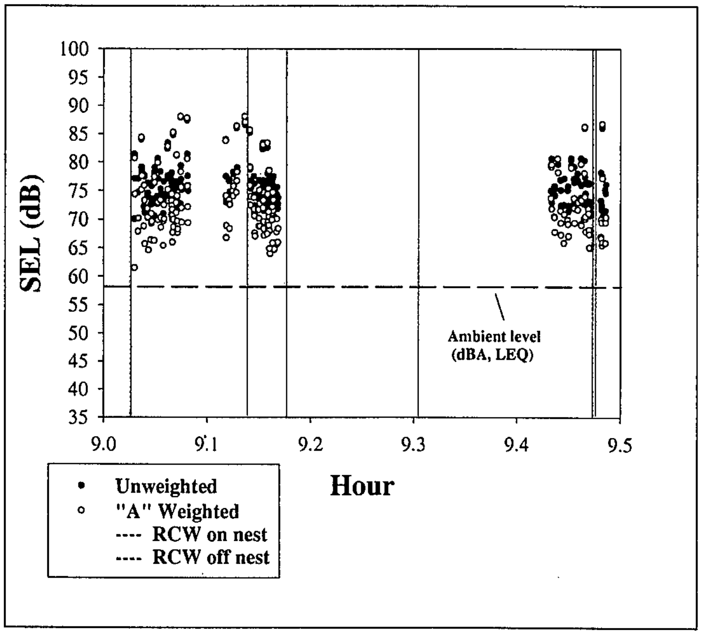

Figure 10. Noise levels from M-16 live fire events at cluster 103 on May 12, 1999.

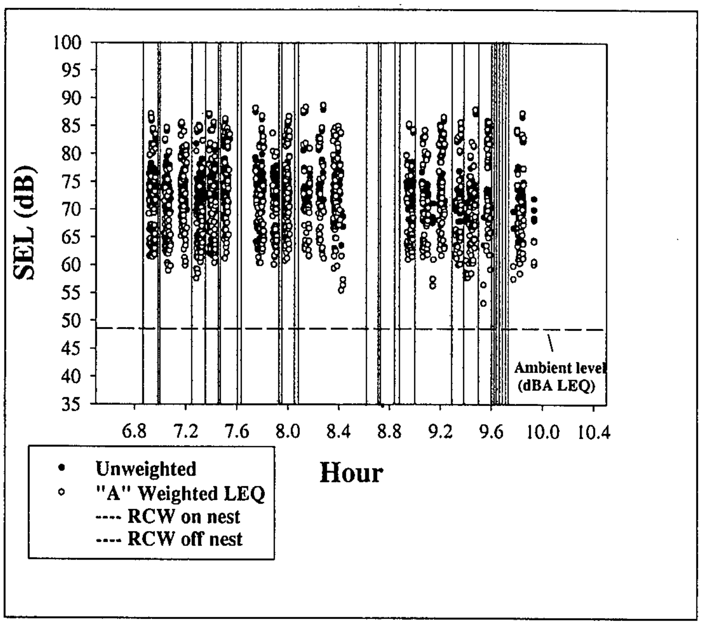

Figure 11. Noise levels from M-16 live fire events at cluster 103 on May 13, 1999.

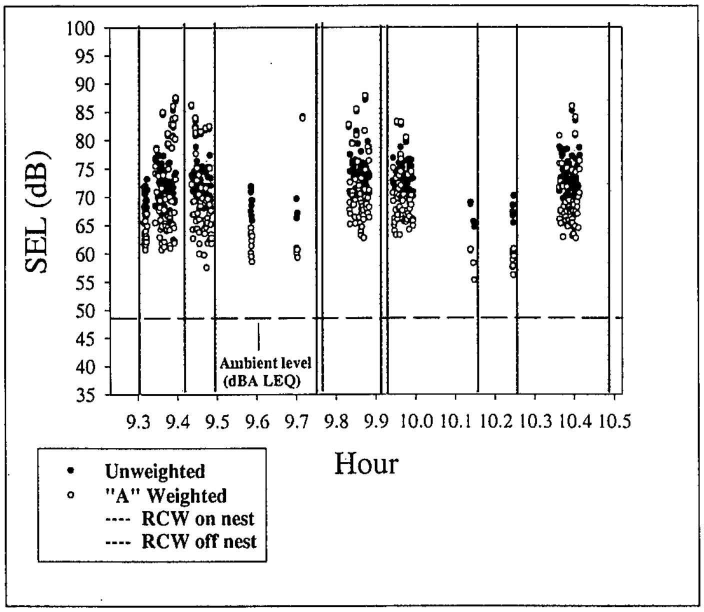

Figure 12. Noise levels from M-16 live fire events at cluster 103 on May 13, 1999.

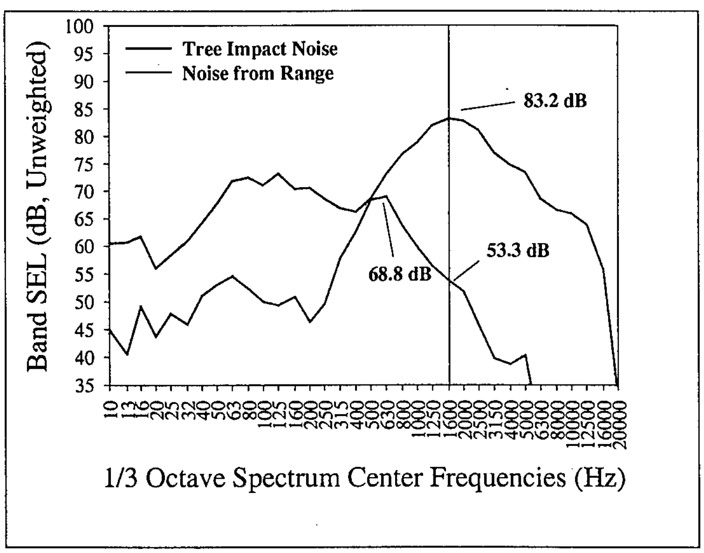

Figure 13. SEL weighting comparison for M-16 live fire on May 17, 1999, from range and tree impact noise near a RCW nest site.

Grenade Simulators

RCWs flushed once during eight grenade simulator blasts recorded during passive noise events. This flush event occurred during a realistic training maneuver when a grenade simulator was detonated approximately 100 m from the nest (Figure C3, Appendix C). A bird was observed returning to the nest within 8 minutes after the flush had occurred (this site was successful in fledging one young). Overall, RCWs did not flush when grenade simulators were detonated ≥ 200 m from nest sites and SEL noise levels were < 84 dBA (91 dB, unweighted;

Appendix B, Table B4). We did not record any grenade simulators < 100 m or between 100 and 200 m and therefore could not test for response within those ranges.

Helicopters

RCWs did not flush when military helicopters were ≥ 100 m from nest sites and SEL noise levels were < 88 dBA (104 dB, unweighted; Appendix B, Table B5). Due to the low probability of encountering helicopters, we were unable to test for RCW response at distances < 100 m.

Large-Caliber Live Fire

Large-caliber live fire events on Fort Stewart were dramatically reduced from numbers documented in 1998, therefore our ability to record RCW responses to such passive noise events was also limited. The 1999 field season data show that RCWs did not flush when large-caliber guns were fired at distances ≥ 700 m from nest sites and SEL noise levels were < 85 dBA (103 dB, unweighted; Appendix B, Table B6). We did not record any large-caliber gun fire < 700 m from any active RCW nest site, therefore, we could not test for response within that range.

5 Discussion

Nesting Success

The preliminary findings, based on 1999 experimental testing data, suggest that measured levels of training noise did not affect RCW nesting success or productivity. We believe the small but nonsignificant decrease in reproductive success between disturbed (N = 48) and undisturbed (N = 25) sites was attributable to natural attrition inherent in the larger disturbed sample. Through further investigation over the next year we will be able to make more definitive conclusions regarding RCW fitness as a function of training noise.

Flush Response and Related Behaviors

Flush Response

The proportion of Red-cockaded Woodpeckers that flushed in response to experimental training noise was negatively related to stimulus distance. The dose-response relationship for RCWs based on flush frequency with distance and noise level indicated that .50-caliber blank fire elicited a greater response than artillery stimulators. RCWs apparently perceive artillery simulators as less threatening than .50-caliber blank fire because of their shorter duration (total event duration), minimal visibility, and lessened association with human activity. It is possible that disturbances in closer proximity to an RCW's location may also be more visible and therefore elicit a greater response than a disturbance farther away, regardless of noise level. It is important to consider all aspects of a stimuli when examining an animal's response to a disturbance. Although season and nesting phase influence avian response to disturbance (Thiessen 1957; Knight and Temple 1986; Delaney et al. 1999), habituation, prior experience, and animal temperament are important factors that should be taken into account (Hart 1985; Manci et al. 1988).

RCWs flushed infrequently in response to passive military training noise during the 1999 nesting season. Most of the passive noise events that we recorded were distant and had relatively low noise levels. Woodpeckers returned to their nests relatively quickly after being flushed. Return times by RCWs were comparable

with times reported for bird species in other noise disturbance studies (Awbrey and Bowles 1990; Holthuijzen et al. 1990), and were comparable with 1998 RCW response data (Pater et al. 1999). The amount of time that an attending adult is away from the nest has important consequences when we consider the role that nest predation and nest competition has on this species. There are a number of species that are capable of usurping nesting cavities from the RCW. Both red-bellied woodpeckers (*Melanerpes carlinus*) and red-headed woodpeckers (*Melanerpes erythrocephalus*) have been shown to remove and eat eggs, usually in the process of usurping the cavity from the RCW. Southern flying squirrels (*Glaucomys volans*) have also been documented to eat eggs or young when competing with RCWs for nest cavities (Jackson 1994).

Nesting Behaviors

Through audio and video surveillance it appears that noise from Small Arms — Golf may have influenced RCW behavior at cluster 103 during the 1999 nesting season. RCWs were not observed arriving or departing from the nest during the nestling phase when the range was firing, only during inactive periods. It is possible that small arms fire from the range is influencing the timing, frequency, and duration of RCW flights from the nest. Noise levels for that range were louder than other comparably distant ranges due to the orientation of the rifles and because of bullet noise from sonic booms and ricocheting bullets. We are currently analyzing the remainder of the video data to determine if nest attentiveness, trip frequency, timing, and duration, or the number of prey deliveries are influenced by experimental or passive training activities on Fort Stewart.

We did not observe any nest abandonment relative to camera use. Birds were observed using camera trees for foraging and perch sites when coming and going from the nest tree.

Distance and Sound Thresholds

Despite the aggressive nature of our testing regime (i.e., close proximity and repeated exposure), RCW behavioral responses were minimal when experimental stimuli were ≥ 122 m away. We did not observe RCWs flushing from the nest when noise stimuli were ≥ 244 m away. Stimulus distances > 122 m will be tested in more detail during the 2000 field season for the development of more definitive distance and sound thresholds based on RCW response parameters. A similar pattern was present during passive disturbances. We observed no flush responses by RCWs when passive stimuli were ≥ 200 m away. Due to the varied nature and location of maneuver training activities on Fort Stewart, it is highly

unlikely that woodpeckers would receive as much disturbance activity during the nesting season within any year as the experimentally disturbed RCW sites received during this year's study.

An examination of the data presented in Appendices B and D reveals a wide range of received noise levels at a given distance. One reason is that different types of noise sources of course have different acoustic emissive power. For a given noise source, received noise level also depends on differences in propagation conditions, a result of differences in atmospheric wind and temperature structure. It is well known that at distances of several kilometers, received noise level can vary by as much as 20 dB above and below the mean due to changes in meteorological conditions (Embleton 1982; Li et al. 1994; Larsson and Israelsson 1991; Pater 1981; Piercy et al. 1977; White and Gilbert 1989; White et al. 1993). Differences in received noise level can also be due to orientation of the weapon relative to the receiver. Many weapons exhibit substantial directivity; some as much as 15 dB louder downrange (Pater 1981; Pater et al. (DRAFT); Schomer et al. 1976a and 1976b [Vol I and II]; Schomer et al. 1979; Schomer et al. 1981; Schomer 1982; Schomer 1984; Schomer and Goebel 1985; Schomer 1986a, 1986b; Walther 1972). Some other important factors that should be taken into account are the orientation of the nest cavity relative to the noise source and any barriers between the noise source and the birds position.

Noise Measurement Test

Noise levels within RCW nest cavities were substantially louder than noise levels recorded at the base of the nest tree. Due to differences in cavity and weapon orientation, presence or absence of barriers, and weapon directivity, we were not able to extrapolate noise levels recorded at the base of the tree to received levels within RCW nest cavities. Noise measurements will therefore have to be taken inside each nest cavity before or after the nesting season for each noise source to determine the noise levels that birds may actually be experiencing. We will investigate this in more detail in 2000. We will also continue testing for differences between artificial and natural cavities during the 2000 field season. Data comparing natural and artificial cavities are currently being analyzed to determine if there is a variation in the resonant frequency of the nest trees and if there are any differences in the noise level or duration of the noise event from comparably distant stimulus events.

6 Plans and Conclusions

Plans

The results of the second year of this project have shown that the basic technical approach is appropriate and effective. The primary need is for more data, which we will collect during the 2000 field season by replicating the research protocol from 1999. In particular, we will obtain more data for experimental manipulations and passive disturbance events, such as small arms blanks, artillery, and helicopters. We will search for reproductively active clusters that are located in areas that will fill in the blanks in the data in terms of stimulus distance and noise level.

The matter of cavity resonance effect on the noise level perceived by the RCWs will continue to be investigated. We cannot measure noise levels in the cavity being used by an endangered species during the nesting season; therefore, we will make cavity measurements during pre- and post-nesting periods. The investigation of woodpecker hearing is beginning to return useful results; the current effort will be continued. An expanded effort may be appropriate.

One aspect of the technical approach that has not yet been executed is to use available noise models and training activity data to calculate noise dose for each cluster, and to examine these data for correlation with nesting success data. Fort Stewart installed the updated version of the Range Facility Management Support System (RFMSS) early in 1998. This system includes detailed data regarding training activity. These data will be used in 2000 to examine said correlation.

Conclusions

During the second year of this study of the impacts of training noise on the RCW, we observed and documented experimental training noise events and the resulting RCW responses under realistic conditions. We measured both proximate response behavior and nesting success. We also observed RCW behavior and nesting success at clusters where noise stimuli were absent or minimal (near or below ambient sound levels), to provide an undisturbed behavior baseline

against which to judge response and impact. No significant difference in nesting success was found between experimentally disturbed and relatively undisturbed nest sites. The second year data are limited in number and statistical power and are not sufficient to make strong conclusions or to establish reliable noise dose-response relations or thresholds. The results are however sufficient to confirm that the project technical approach is appropriate and needs only minor revision, and that the project objectives will be achieved.

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Appendix A: Significant Legal Requirements

The Endangered Species Act (ESA) requires Federal agencies to carry out programs for the conservation of threatened and endangered species. Agencies are further required to ensure that their actions do not jeopardize the continued existence of listed species or result in the destruction or adverse modification of the critical habitat of these species. These requirements fall under provisions of Section 7 of the Act, which also requires agencies to conduct biological assessments to evaluate the impacts of their activities on listed species. This assessment serves as the primary basis for coordination with the U.S. Fish and Wildlife Service which, in turn, issues a biological opinion and specific endangered species management recommendations. Implementation of these recommendations can place constraints on execution of the military mission. To avoid possible penalties resulting from findings of "take" due to harassment or harm resulting from exposure to military-related noise, a capability is needed to evaluate and monitor the impact of noise on both behavior and breeding success of affected species. Under the ESA it is the responsibility of the land owner, not of the U.S. Fish and Wildlife Service, to evaluate effects of land use activities on threatened and endangered species.

The ESA prohibits take of endangered species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Within the definition of take, the term "harm" has been subject to significant judicial scrutiny. "Harm" is clearly an act that actually kills or injures wildlife, but it may also include actions that significantly impair essential behavioral patterns, including breeding, feeding, or sheltering.

The National Environmental Policy Act (NEPA) requires Federal agencies to assess the impact of planned activities on the environment and to make the assessment available to the general public. The decision making procedures are documented by either an Environmental Assessment (EA) or an Environmental Impact Statement (EIS). Noise and threatened and endangered species are often important issues in these documents, particularly as reviewers place a stronger emphasis on cumulative effects of activities.

Appendix B: Summary Data Tables

Table B 1. Flush response of nesting Red-cockaded Woodpeckers versus the number, distance and noise levels of experimental artillery simulator testing on Fort Stewart, GA, 1999.

Stimulus Distance (m)	Cluster Tested	Number of Noise Events	Number of Data Sessions	Number of Flushes	Noise Levels, SEL (dB) Cavity level	unweighted	"A" weighted	Typical Ambient LEQ (dB) "A" weighted
15.2	79, 137, 183	3	3	2	109.0-114.9	100.8-107.4	95.9-100.8	40.5-40.7
30.5	1,41,47,79,80,81,86, 87,107,126,137,159, 172,177,183,197,198	17	17	8	106.0-111.3	101.9-104.9	90.6-98.9	38.0-43.0
61.0	2,41,47,48,75,80,86,87,107,126,159,172, 177,179,197,198,218	17	17	5	103.9-108.9	94.4-103.8	89.5-94.5	38.1-56.5
91.5	2,75,218	3	3	0	105.3	99.1-100.9	85.9-89.0	38.9-41.1
122.0	2,47,48,71,75,87,172,179,184,198,218	11	11	1	98.0-104.1	93.7-99.1	75.4-83.9	41.0-44.2
244.0	184	1	1	0	----	97.7	77.9	41.3
Totals	**24**	**52**	**52**	**16**				

Table B 2. Flush response of nesting Red-cockaded Woodpeckers versus the number, distance and noise levels of experimental .50-caliber blank fire testing on Fort Stewart, GA, 1999.

Stimulus Distance (m)	Clusters Tested	Number of Noise Events	Number of Data Sessions	Number of Flushes	Noise Levels, SEL (dB) Cavity level	unweighted	"A" weighted	Typical Ambient LEQ (dB) "A" weighted
15.2	23, 53, 61, 151	39	4	3	115.1-118.9	115.2-108.3	101.6-103.1	41.5-53.7
30.5	23,32,36,51,53,61, 88,120,129,148, 151, 163,194,206	98	15	9	108.7-113.7	94.4-105.1	90.7-99.9	40.8-41.2
61.0	6,10,36,51,57,120, 129,133,139,148, 163,176,194,205, 206,227,	114	16	7	99.6-108.9	85.7-98.8	78.9-88.9	37.0-42.7
91.5	6,36,57,129,133,139, 176,205,228	66	9	6	93.6-102.5	84.3-95.0	78.3-87.4	39.2-42.7
122.0	12,23,51,57,133,148, 176,205,228	63	9	1	93.4-96.4	86.4-89.4	79.5-82.7	38.2-41.5
Totals	**24**	**380**	**53**	**26**				

Table B 3. Flush response of nesting Red-cockaded Woodpeckers versus the number, distance and noise levels of passive M-16 live fire on Fort Stewart, GA, 1999.

Stimulus Distance (m)	Cluster Tested	Number of Noise Events	Number of Data Sessions	Number of Flushes	Noise Levels, SEL (dB) Unweighted	Noise Levels, SEL (dB) "A" weighted	Typical Ambient LEQ (dB) "A" weighted
N/A	103	102	3	0	78.2-87.9	77.7-88.1	49.4-58.3
400-450	3, 103	484	4	0	63.5-79.4	55.5-77.4	49.2-59.5
1200	25	68	1	0	66.3-76.0	50.2-69.8	46.9
Totals	**3**	**654**	**8**	**0**			

Table B 4. Flush response of nesting Red-cockaded Woodpeckers versus the number, distance and noise levels of passive grenade simulator blasts on Fort Stewart, GA, 1999.

Stimulus Distance (m)	Cluster Tested	Number of Noise Events	Number of Data Sessions	Number of Flushes	Noise Levels, SEL (dB) Unweighted	Noise Levels, SEL (dB) "A" weighted	Typical Ambient LEQ (dB) "A" weighted
100	41	1	1	1	95.0	89.5	42.3
200	41	1	1	0	91.6	84.8	42.5
300	103	1	1	0	80.4-83.3	58.5-61.8	49.4
400	103	5	5	0	78.2-78.7	60.0-68.2	49.4
Totals	**2**	**8**	**8**	**1**			

Table B 5. Flush response of nesting Red-cockaded Woodpeckers versus the number, distance and noise levels of passive helicopter flights on Fort Stewart, GA, 1999. Stimulus distances represent the closest estimated approach distance by a helicopter.

Stimulus Distance (m)	Cluster Tested	Number of Noise Events	Number of Data Sessions	Number of Flushes	Noise Levels, SEL (dB) Unweighted	Noise Levels, SEL (dB) "A" weighted	Typical Ambient LEQ (dB) "A" weighted
100-150	6	2	2	0	104.4	88.0	---
200-250	23, 44, 83	4	3	0	95.3-99.2	78.7-84.9	38.14-53.7
300	6, 10, 143, 151, 218	5	5	0	90.3-93.8	75.0-84.1	37.0-56.5
400	25, 218	2	2	0	84.8-85.1	71.6-74.5	46.9-56.5
Totals	**9**	**13**	**12**	**0**			

Table B 6. Flush response of nesting Red-cockaded Woodpeckers versus the number, distance and noise level of passive large-caliber live fire on Fort Stewart, GA, 1999.

Stimulus Distance (m)	Cluster Tested	Number of Noise Events	Number of Data Sessions	Number of Flushes	Noise Levels, SEL (dB) unweighted	Noise Levels, SEL (dB) "A" weighted	Typical Ambient LEQ (dB) "A" weighted
700-800	172	2	1	0	101.8-103.0	83.5-85.6	41.4
3000-3500	25,83	10	2	0	68.0-91.3	53.3-65.1	39.8-46.9
5000-6000	10,143,159	4	3	0	79.6-86.4	50.1-71.3	38.1-46.2
Totals	**6**	**16**	**6**	**0**			

Appendix C: Source Spectra Examples

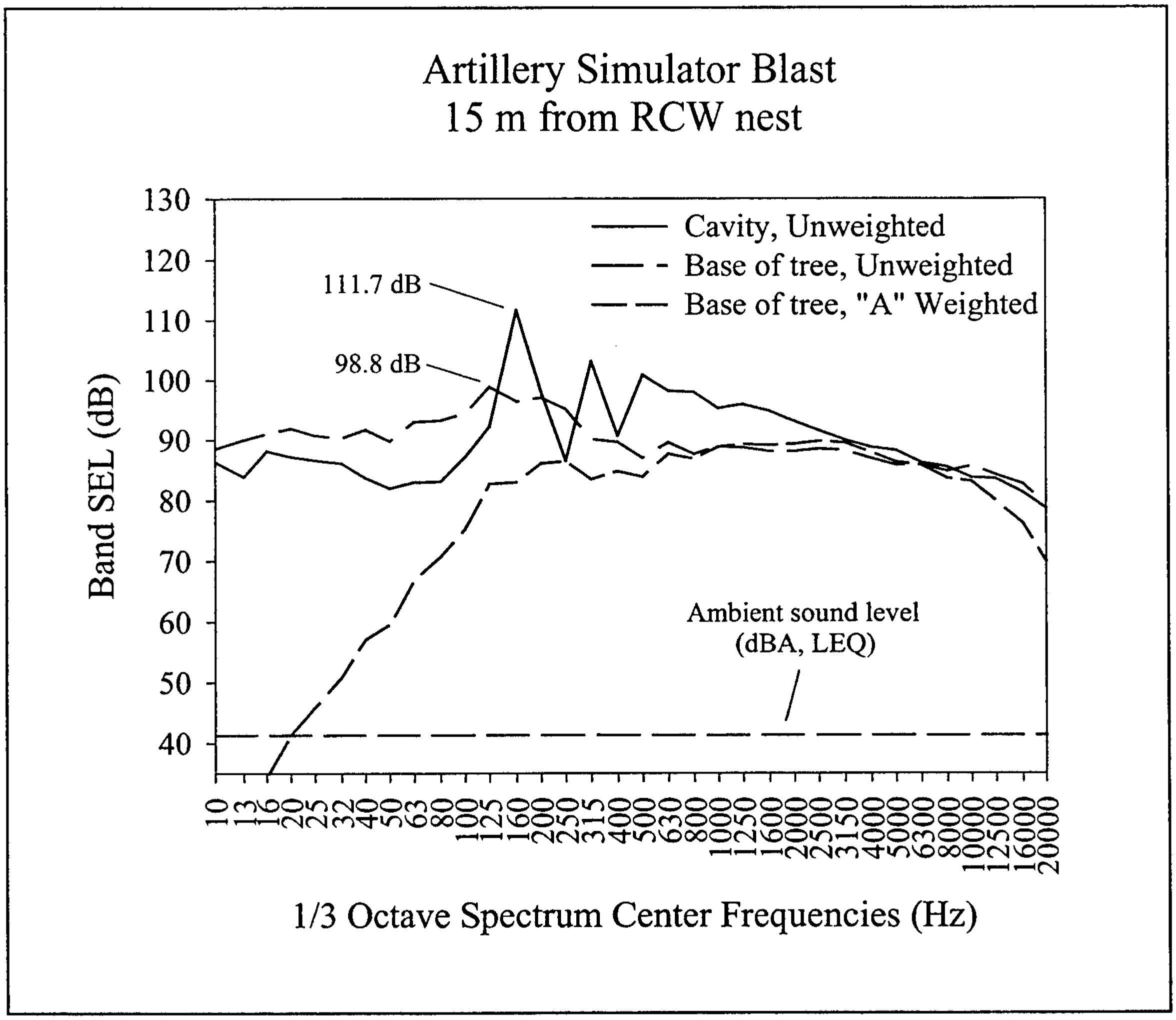

Figure C-1. SEL weighting comparison for experimental artillery simulator blast at cluster 172 on June 4, 1999.

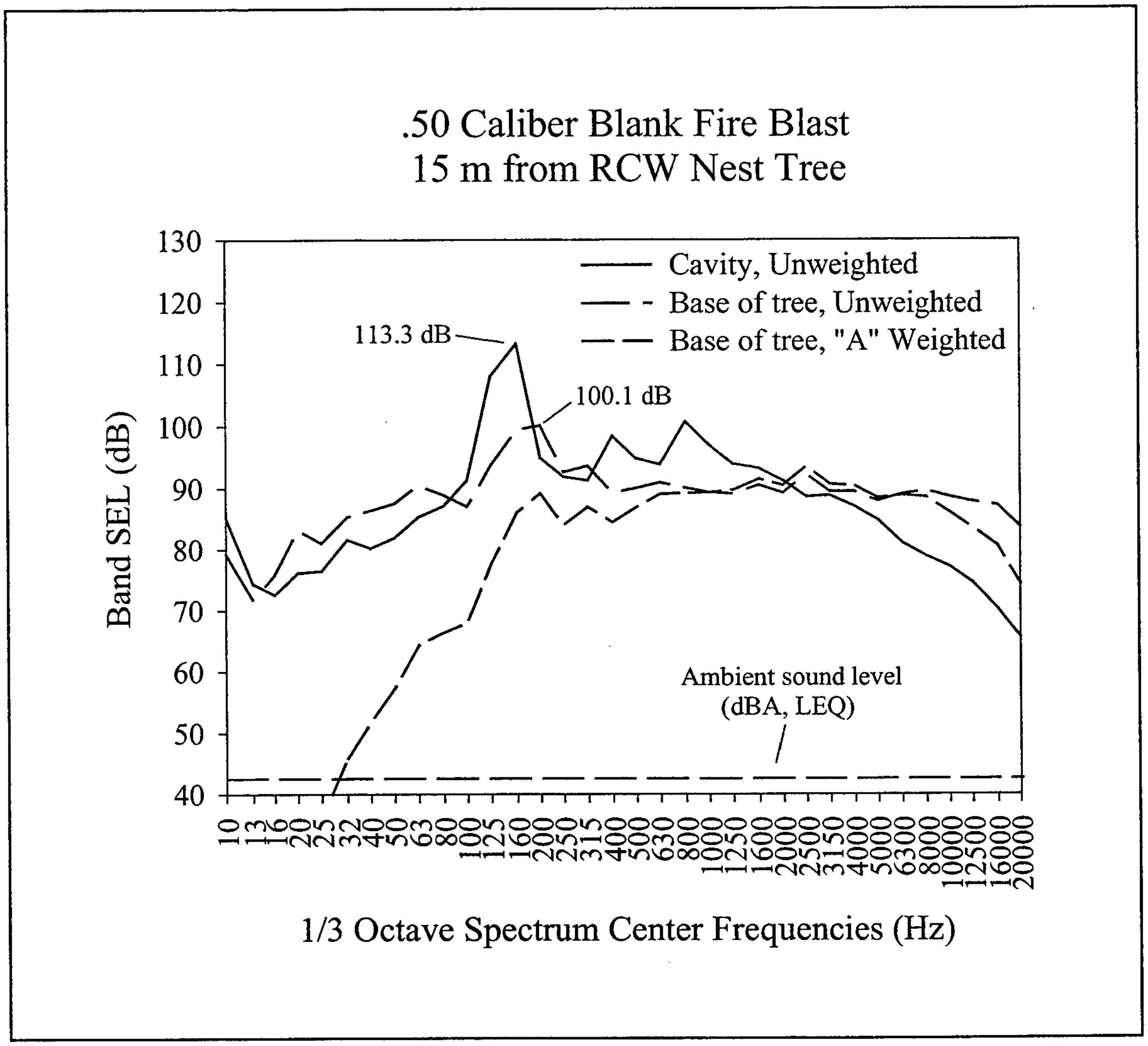

Figure C-2. SEL weighting comparison for experimental .50-caliber blank fire at cluster 151 on June 24, 1999.

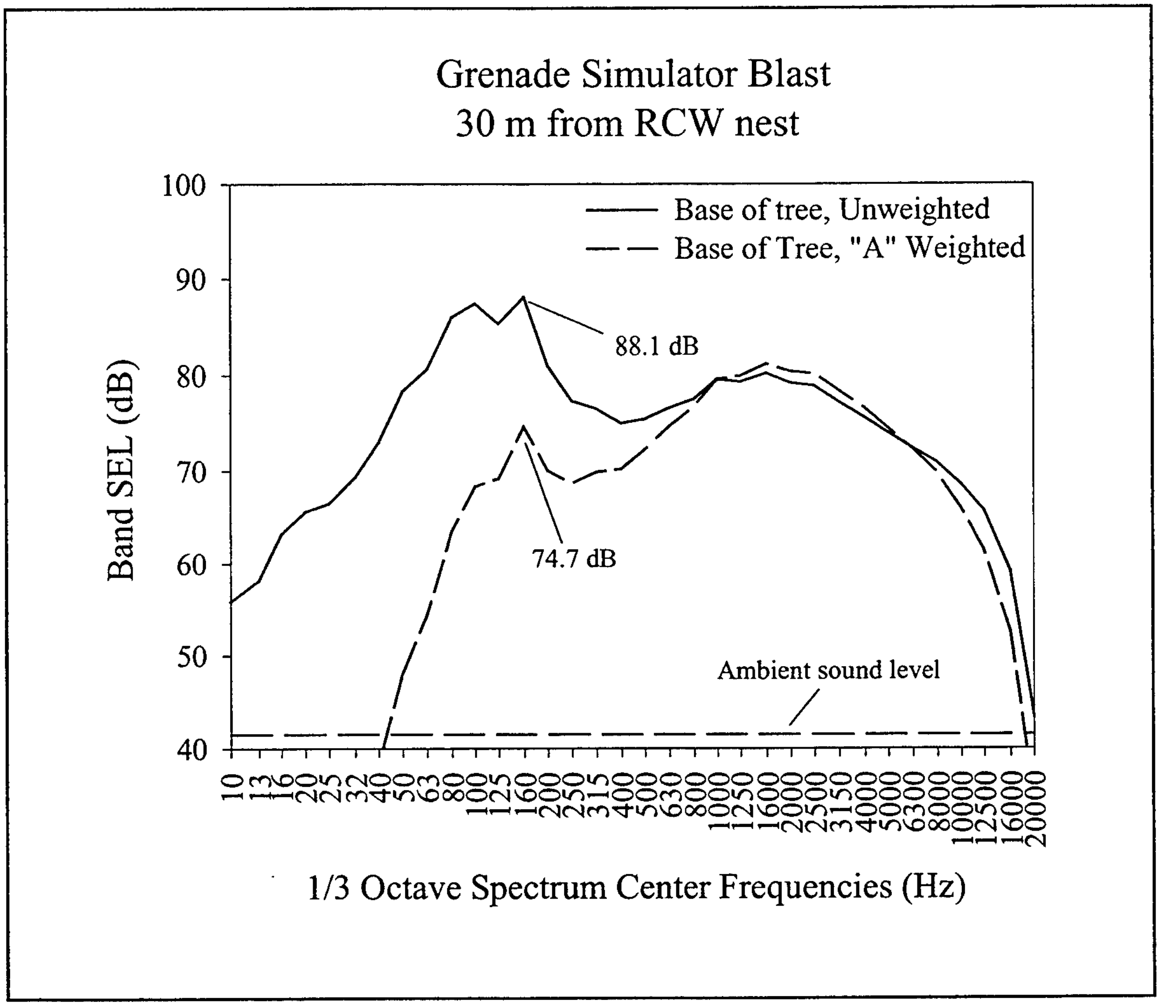

Figure C-3. SEL weighting comparison for a passive grenade simulator blast at cluster 41 on June 2, 1999.

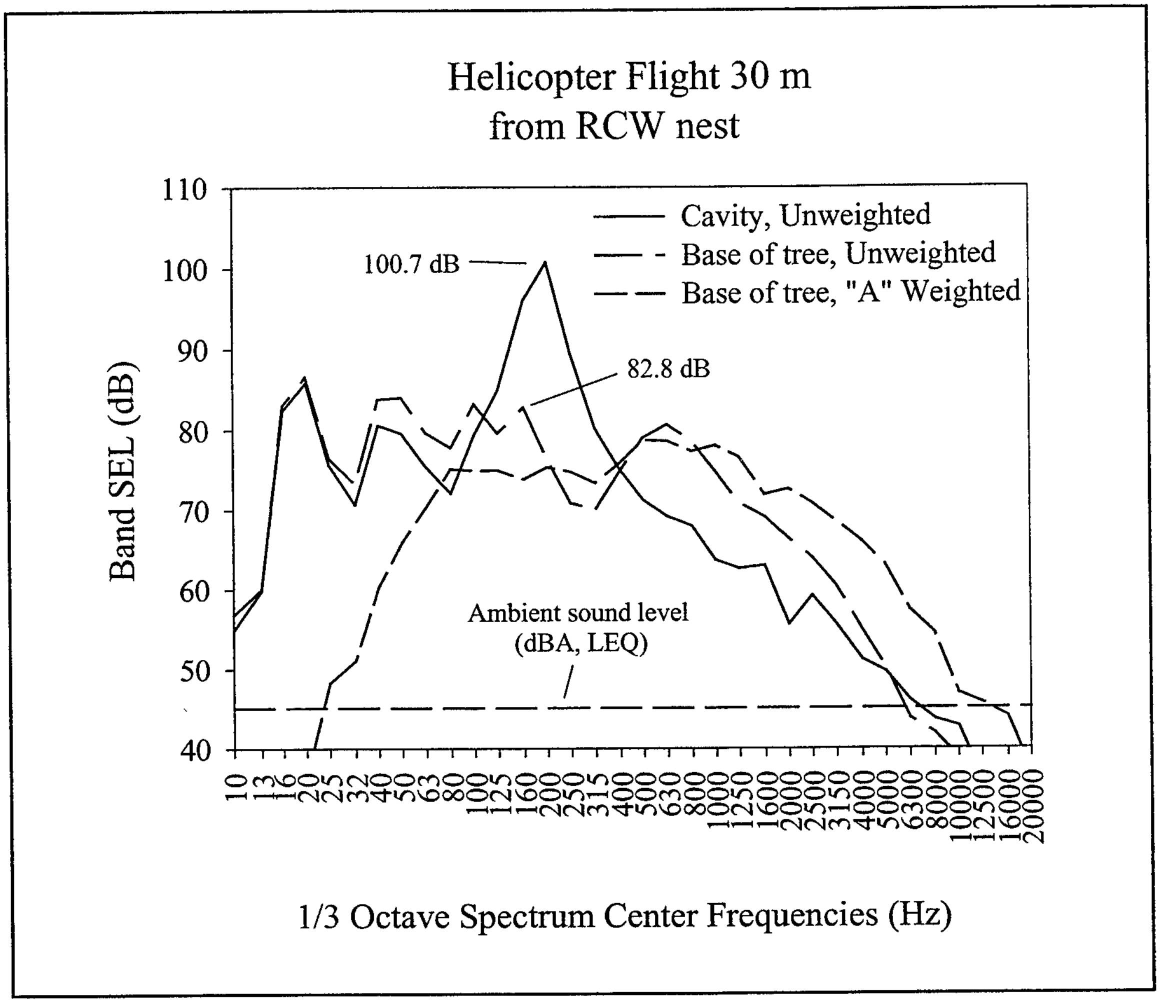

Figure C-4. SEL weighting comparison for a passive helicopter flight at cluster 6 on April 29, 1999.

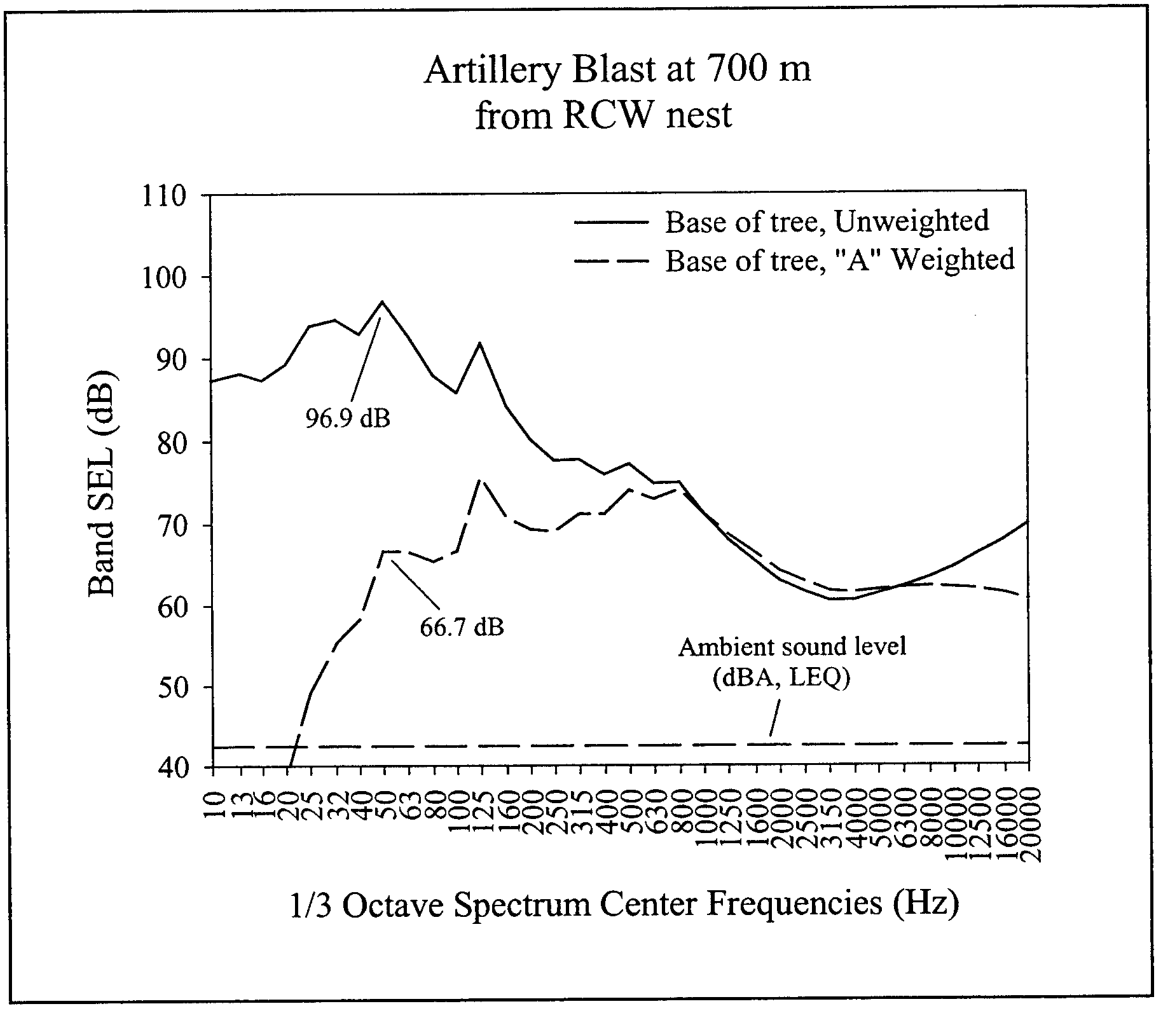

Figure C-5. SEL comparison of passive large-caliber live fire at cluster 172 on April 27, 1999.

Appendix D: Detailed Noise Event and RCW Response Data

Table D 1. Summary data for experimental artillery simulator blast noise on Fort Stewart, GA, 1999.

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	RCW Re-sponse	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic Flat	A
1	05-May-99	I-4	Art. Sim.	30.5	0	0		Base	104.5	96.8
1	08-Jun-99	I-7	Art. Sim.	30.5	0	0		Base	102.8	96.7
2	28-Apr-99	I-3	Art. Sim.	122	0	0		Base	89.4	84.5
2	03-May-99	I-8	Art. Sim.	61	0	1.5		Base	102.1	92.7
2	06-May-99	I-9	Art. Sim.	91.5	0	0		Base	100.9	89.0
2	21-May-99	I-1	Art. Sim.	61	0	0		Base	102.1	92.2
2	27-May-99	Incubation	Art. Sim.	61	0	0		Base	100.5	91.0
2	08-Jun-99	N-9	Art. Sim.	30.5	0	0		Base	107.0	99.7
6	27-May-99	Post-fled.	Art. Sim.	30.5	0	0		Base	105.0	98.1
6	27-May-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	110.6	101.3
6	27-May-99	Post-fled.	Art. Sim.	61	0	0		Base	100.9	93.3
6	27-May-99	Post-fled.	Art. Sim.	61	0	0		Cavity	105.7	96.7
6	27-May-99	Post-fled.	Art. Sim.	122	0	0		Base	88.7	79.3
6	27-May-99	Post-fled.	Art. Sim.	122	0	0		Cavity	102.6	92.2
41	26-May-99	I-1	Art. Sim.	30.5	0	0		Base	104.0	96.6
41	02-Jun-99	I-8	Clay.	0	0	7.95		Base	95.0	89.5
41	02-Jun-99	I-8	Clay.	0	0	7.95		Base	91.6	84.8
41	02-Jun-99	I-8	Art. Sim.	61	0	1.48		Base	101.0	91.2
44	27-May-99	Post-fled.	Art. Sim.	61	0	0		Cavity	112.2	103.4
44	27-May-99	Post-fled.	Art. Sim.	61	0	0		Base	103.9	94.9
44	27-May-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	113.9	105.9
44	27-May-99	Post-fled.	Art. Sim.	30.5	0	0		Base	105.0	99.2
44	27-May-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	112.8	105.1
44	27-May-99	Post-fled.	Art. Sim.	15.2	0	0		Base	106.8	100.1
47	26-Apr-99	Egg laying	Art. Sim.	30.5	0	0		Base	100.3	85.2
47	30-Apr-99	I-3	Art. Sim.	61	0	0		Base	102.9	92.6
47	03-May-99	I-6	Art. Sim.	30.5	0	0		Base	104.9	97.7
47	04-Jun-99	Post-fled.	Art. Sim.	15.2	0	0		Base	106.3	100.7
47	04-Jun-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	112.7	107.0
47	04-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	104.8	96.5
47	04-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	112.3	104.3
47	04-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	111.6	103.4
47	04-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	102.1	92.1
47	11-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	112.7	103.8
47	11-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	103.9	96.0
47	11-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	103.3	93.1
47	11-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	112.8	104.0

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	RCW Re-sponse	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic Flat	A
47	11-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	110.5	104.4
47	11-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	102.5	94.3
47	11-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	100.1	89.1
47	11-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	108.1	99.9
48	23-Apr-99	I-3	Art. Sim.	122	0	0		Base	101.5	86.7
48	23-Apr-99	I-3	Art. Sim.	244	0	0		Base	97.9	83.2
48	27-Apr-99	I-7	Art. Sim.	61	0	0		Base	103.6	92.8
48	02-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	104.0	95.5
48	02-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	112.1	104.0
48	02-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	111.4	102.5
48	02-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	102.8	93.1
51	26-May-99	Post-fled.	Art. Sim.	15.2	0	0		Base	109.0	103.8
51	26-May-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	113.0	107.5
51	26-May-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	113.3	106.3
51	26-May-99	Post-fled.	Art. Sim.	30.5	0	0		Base	106.4	100.1
52	13-May-99	Post-fled.	Art. Sim.	15.2	0	0		Base	107.8	101.4
52	13-May-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	108.2	100.9
52	13-May-99	Post-fled.	Art. Sim.	30.5	0	0		Base	104.1	97.1
52	13-May-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	105.6	98.0
52	13-May-99	Post-fled.	Art. Sim.	61	0	0		Base	99.8	90.1
52	13-May-99	Post-fled.	Art. Sim.	61	0	0		Cavity	104.7	93.4
52	13-May-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	101.8	96.0
52	13-May-99	Post-fled.	Art. Sim.	30.5	0	0		Base	95.9	91.6
52	13-May-99	Post-fled.	Art. Sim.	61	0	0		Cavity	96.8	92.2
52	13-May-99	Post-fled.	Art. Sim.	61	0	0		Base	91.6	90.0
71	07-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	98.0	84.2
71	07-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	100.8	86.8
71	07-Jun-99	Post-fled.	Art. Sim.	122	0	0		Cavity	99.1	83.2
71	07-Jun-99	Post-fled.	Art. Sim.	122	0	0		Base	94.3	78.5
75	28-Apr-99	I-3	Art. Sim.	122	0	0		Base	99.8	86.1
75	03-May-99	I-8	Art. Sim.	61	0	0		Base	101.7	90.6
75	06-May-99	N-0	Art. Sim.	91.5	0	0		Base	100.4	86.3
75	07-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	101.2	90.0
75	07-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	109.8	99.3
75	07-Jun-99	Post-fled.	Art. Sim.	91.5	0	0		Cavity	105.3	93.7
75	07-Jun-99	Post-fled.	Art. Sim.	91.5	0	0		Base	106.0	94.3
79	06-May-99	I-3	Art. Sim.	30.5	0	0		Base	103.3	96.7
79	13-May-99	I-10	Art. Sim.	30.5	0	0		Base	104.1	97.5
79	14-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	107.4	100.8

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	RCW Re-sponse	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic Flat	A
79	14-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	114.6	107.9
79	17-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	95.3	85.3
80	17-May-99	I-1	Art. Sim.	61	0	0		Base	94.4	89.5
80	21-May-99	I-5	Art. Sim.	30.5	0	0		Base	103.6	95.1
81	06-May-99	I-1	Art. Sim.	30.5	0	0		Base	103.5	94.4
86	04-May-99	I-6	Art. Sim.	30.5	0	2.917		Base	103.6	96.9
86	04-May-99	I-6	Art. Sim.	30.5	0	0.1208333 3		Base	104.0	97.2
86	09-May-99	N-0	Art. Sim.	61	0	3.717		Base	96.7	89.5
86	12-May-99	N-3	Art. Sim.	30.5	0	13.667		Base	102.5	93.3
87	23-Apr-99	I-1	Art. Sim.	122	0	5.467		Base	96.8	83.1
87	27-Apr-99	I-5	Art. Sim.	61	0	0		Base	104.1	95.1
87	30-Apr-99	I-8	Art. Sim.	30.5	0	1.567		Base	106.3	98.9
87	03-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	105.5	94.2
87	03-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	109.2	103.0
87	03-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	102.7	94.1
87	03-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	106.8	101.1
103	13-May-99	N-3	Clay.	0	0	0		Base	80.4	61.8
103	13-May-99	N-3	Clay.	0	0	0		Base	81.4	58.5
103	13-May-99	N-3	Clay.	0	0	0		Base	82.7	59.7
103	13-May-99	N-3	Clay.	0	0	0		Base	78.8	60.0
103	13-May-99	N-3	Clay.	0	0	0		Base	83.3	60.3
103	13-May-99	N-3	Clay.	0	0	0		Base	78.7	68.2
103	13-May-99	N-3	Clay.	0	0	0		Base	84.8	85.6
103	13-May-99	N-3	Clay.	0	0	0		Base	78.4	55.5
107	05-May-99	I-9	Art. Sim.	30.5	2	5.067		Base	104.5	98.9
107	10-May-99	N-0	Art. Sim.	61	0	0		Base	101.9	92.5
107	12-May-99	I-7	Art. Sim.	30.5	2	5.15		Base	105.1	98.6
107	17-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	103.8	97.8
107	17-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	112.3	106.3
107	17-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	99.3	90.1
107	17-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	111.3	103.5
107	17-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	101.9	94.6
107	17-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	94.9	88.2
107	17-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	108.6	99.4
107	17-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	117.8	108.9
107	17-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	103.8	97.8
107	17-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	112.3	106.3
125	13-May-99	Post-fled.	Art. Sim.	15.2	0	0		Base	103.0	97.6
125	13-May-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	107.1	99.7

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	RCW Re-sponse	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic Flat	A
125	13-May-99	Post-fled.	Art. Sim.	30.5	0	0		Base	97.9	93.0
125	13-May-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	100.3	93.7
125	13-May-99	Post-fled.	Art. Sim.	61	0	0		Base	91.3	87.8
125	13-May-99	Post-fled.	Art. Sim.	61	0	0		Cavity	94.7	89.1
125	13-May-99	Post-fled.	Art. Sim.	15.2	0	0		Base	103.3	96.6
125	13-May-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	106.1	99.4
125	13-May-99	Post-fled.	Art. Sim.	30.5	0	0		Base	101.9	96.1
125	13-May-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	104.3	96.7
125	13-May-99	Post-fled.	Art. Sim.	61	0	0		Base	89.8	83.9
125	13-May-99	Post-fled.	Art. Sim.	61	0	0		Cavity	95.7	89.2
126	04-May-99	I-3	Art. Sim.	30.5	0	0		Base	105.4	98.2
126	09-May-99	I-8	Art. Sim.	61	0	0		Base	102.1	90.5
126	13-May-99	N-1	Art. Sim.	30.5	0	0		Base	104.2	97.6
137	04-May-99	I-7	Art. Sim.	30.5	0	0		Base	103.4	93.7
137	26-May-99	I-7	Art. Sim.	30.5	2	3.483		Base	103.6	94.3
137	01-Jun-99	N-1	Art. Sim.	15.2	0	0		Base	100.8	95.9
137	01-Jun-99	0	Art. Sim.	15.2	0	0		Base	100.8	95.9
143	27-May-99	Post-fled.	Art. Sim.	30.5	0	0		Base	102.7	95.4
143	27-May-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	110.9	103.7
143	27-May-99	Post-fled.	Art. Sim.	15.2	0	0		Base	105.6	98.7
143	27-May-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	109.8	102.7
159	03-May-99	I-3	Art. Sim.	61	0	0		Base	102.5	94.2
159	06-May-99	I-5	Art. Sim.	30.5	2	2.7		Base	111.6	104.7
159	17-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	106.8	99.7
159	17-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	114.5	106.8
159	17-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	115.2	105.5
159	17-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	103.0	94.4
172	23-Apr-99	I-7	Art. Sim.	122	0	0		Base	100.5	86.8
172	27-Apr-99	N-0	Art. Sim.	61	0	0		Base	101.4	91.9
172	03-May-99	N-6	Art. Sim.	61	0	0		Base	103.9	96.6
172	04-Jun-99	Post-fled.	Art. Sim.	15.2	0	0		Base	106.7	100.1
172	04-Jun-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	113.5	106.8
172	04-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	104.6	99.1
172	04-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	113.0	106.4
172	04-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	102.9	93.3
172	04-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	112.4	104.6
177	09-May-99	I-3	Art. Sim.	61	0	0		Base	96.4	90.6
177	11-May-99	I-8	Art. Sim.	30.5	2	3.367		Base	104.8	97.5
177	17-May-99	N-0	Art. Sim.	30.5	0	0		Base	104.4	96.2

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	RCW Re-sponse	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic Flat	A
177	11-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	110.4	102.8
177	11-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	103.5	95.1
177	11-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	101.3	90.8
177	11-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	109.5	99.1
177	11-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	109.3	102.8
177	11-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	105.8	100.1
177	11-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	98.8	86.5
177	11-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	104.1	93.7
179	23-Apr-99	I-4	Art. Sim.	122	0	0		Base	100.0	86.3
179	28-Apr-99	I-9	Art. Sim.	61	0	0		Base	99.8	92.0
179	07-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	113.7	103.5
179	07-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	103.0	91.4
179	07-Jun-99	Post-fled.	Art. Sim.	122	0	0		Cavity	108.4	97.2
179	07-Jun-99	Post-fled.	Art. Sim.	122	0	0		Base	99.6	81.5
183	04-May-99	I-6	Art. Sim.	30.5	0	0		Base	101.9	90.6
183	10-May-99	N-1	Art. Sim.	15.2	0	0		Base	103.6	98.0
183	07-Jun-99	Post-fled.	Art. Sim.	15.2	0	0		Base	105.8	97.5
183	07-Jun-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	109.0	103.7
183	07-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	108.6	102.1
183	07-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	104.0	97.1
183	07-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	101.2	90.8
183	07-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	108.8	100.1
184	23-Apr-99	I-1	Art. Sim.	244	0	0		Base	97.7	77.9
184	27-Apr-99	I-5	Art. Sim.	122	0	0		Base	99.1	83.9
194	26-May-99	Post-fled.	Art. Sim.	15.2	0	0		Base	107.3	99.6
194	26-May-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	113.8	106.0
194	26-May-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	114.5	105.2
194	26-May-99	Post-fled.	Art. Sim.	30.5	0	0		Base	106.4	99.0
197	06-May-99	I-7	Art. Sim.	30.5	2	5.983		Base	103.2	95.1
197	10-May-99	N-0	Art. Sim.	61	0	0		Base	97.7	86.3
197	12-May-99	N-2	Art. Sim.	30.5	0	0		Base	101.0	93.5
197	18-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	103.6	94.0
197	18-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	104.1	94.5
197	18-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	107.8	100.3
197	18-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	101.6	92.6
197	18-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	105.0	98.3
197	18-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	107.8	101.0
198	23-Apr-99	I-5	Art. Sim.	122	0	0		Base	100.3	88.2
198	27-Apr-99	I-9	Art. Sim.	61	0	0		Base	103.3	93.8

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	RCW Re-sponse	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic	
									Flat	A
198	30-Apr-99	N-1	Art. Sim.	30.5	0	0		Base	104.6	97.6
198	11-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	102.7	95.7
198	11-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	108.7	100.3
198	11-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	107.6	95.4
198	11-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	98.3	87.9
198	11-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Base	105.6	95.5
198	11-Jun-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	110.7	103.4
198	11-Jun-99	Post-fled.	Art. Sim.	61	0	0		Base	102.1	91.2
198	11-Jun-99	Post-fled.	Art. Sim.	61	0	0		Cavity	109.2	99.1
199	11-May-99	Inactive	Art. Sim.	15.2	0	0		Base	113.5	105.8
199	11-May-99	Inactive	Art. Sim.	15.2	0	0		Cavity	117.5	110.7
199	11-May-99	Inactive	Art. Sim.	30.5	0	0		Base	103.6	97.0
199	11-May-99	Inactive	Art. Sim.	30.5	0	0		Cavity	109.7	104.0
199	11-May-99	Inactive	Art. Sim.	61	0	0		Base	94.9	85.0
199	11-May-99	Inactive	Art. Sim.	61	0	0		Cavity	101.5	95.0
199	11-May-99	Inactive	Art. Sim.	61	0	0		Base	103.1	95.7
199	11-May-99	Inactive	Art. Sim.	61	0	0		Cavity	104.3	97.1
199	11-May-99	Inactive	Art. Sim.	30.5	0	0		Base	104.0	99.3
199	11-May-99	Inactive	Art. Sim.	30.5	0	0		Cavity	102.5	96.4
206	12-May-99	I-10	Art. Sim.	30.5	0	0		Base	103.6	97.3
208	11-May-99	Post-fled.	Art. Sim.	15.2	0	0		Base	102.4	97.2
208	11-May-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	104.6	97.4
208	11-May-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	107.5	98.9
208	11-May-99	Post-fled.	Art. Sim.	30.5	0	0		Base	103.3	96.5
208	11-May-99	Post-fled.	Art. Sim.	61	0	0		Cavity	106.5	96.0
208	11-May-99	Post-fled.	Art. Sim.	61	0	0		Base	101.0	90.2
211	13-May-99	Post-fled.	Art. Sim.	15.2	0	0		Base	102.3	96.6
211	13-May-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	106.7	99.0
211	13-May-99	Post-fled.	Art. Sim.	30.5	0	0		Base	96.0	90.3
211	13-May-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	102.6	95.4
211	13-May-99	Post-fled.	Art. Sim.	61	0	0		Base	92.7	89.0
211	13-May-99	Post-fled.	Art. Sim.	61	0	0		Cavity	97.3	91.4
218	23-Apr-99	I-4	Art. Sim.	244	0	0		Base	93.7	75.4
218	27-Apr-99	I-8	Art. Sim.	61	2	1.7		Base	103.8	94.2
218	30-Apr-99	N-0	Art. Sim.	91.5	0	0		Base	99.1	85.9
218	26-May-99	Post-fled.	Art. Sim.	15.2	0	0		Base	107.0	100.8
218	26-May-99	Post-fled.	Art. Sim.	15.2	0	0		Cavity	110.1	102.2
218	26-May-99	Post-fled.	Art. Sim.	30.5	0	0		Base	106.1	98.3
218	26-May-99	Post-fled.	Art. Sim.	30.5	0	0		Cavity	110.4	101.9

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	RCW Re-sponse	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic	
									Flat	A
231	11-May-99	Inactive	Art. Sim.	15.2	0	0		Base	104.5	97.0
231	11-May-99	Inactive	Art. Sim.	15.2	0	0		Cavity	109.9	104.5
231	11-May-99	Inactive	Art. Sim.	30.5	0	0		Cavity	107.3	100.6
231	11-May-99	Inactive	Art. Sim.	30.5	0	0		Base	105.4	97.8
231	11-May-99	Inactive	Art. Sim.	61	0	0		Base	101.7	91.4
231	11-May-99	Inactive	Art. Sim.	61	0	0		Cavity	105.4	98.6
236	11-May-99	Inactive	Art. Sim.	15.2	0	0		Base	101.4	93.9
236	11-May-99	Inactive	Art. Sim.	15.2	0	0		Cavity	105.8	98.0
236	11-May-99	Inactive	Art. Sim.	30.5	0	0		Cavity	104.8	97.1
236	11-May-99	Inactive	Art. Sim.	30.5	0	0		Base	102.0	94.5
236	11-May-99	Inactive	Art. Sim.	61	0	0		Base	102.1	90.1
236	11-May-99	Inactive	Art. Sim.	61	0	0		Cavity	105.4	97.7

Table D 2. Representative unweighted noise spectra for experimental artillery simulators on Fort Stewart, GA.

Col.	Date	Event Type	Event Dist. (m)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
1	5/5	Art. Sim.	30.5	Base	73	81	85	88	88	88	86	90	89	93	96	98	95	93	91	87	88	83	85	86	86	86	86	86	84	85	83	81	80	77	75	72	69	63	104.5
1	6/8	Art. Sim.	30.5	Base	86	87	86	87	87	86	83	87	88	89	93	93	92	94	90	90	89	88	86	85	86	87	86	85	84	84	81	80	78	76	74	72	69	66	102.8
2	4/28	Art. Sim.	122	Base	76	75	73	71	73	77	77	79	79	80	76	74	71	73	68	66	69	71	73	73	75	73	73	75	72	74	73	71	70	69	70	52	50	51	89.4
2	5/3	Art. Sim.	61	Base	77	80	83	85	87	87	87	92	94	90	97	91	87	90	80	83	83	80	81	81	82	82	81	82	82	80	79	78	78	76	73	68	62	55	102.1
2	5/6	Art. Sim.	91.5	Base	54	68	74	78	81	83	89	92	94	96	92	84	86	83	83	81	77	78	77	77	78	79	78	78	77	77	75	73	71	68	65	61	57	53	100.9
2	5/21	Art. Sim.	61	Base	74	74	76	77	79	85	87	90	92	97	95	91	88	89	84	83	82	80	81	80	82	81	82	81	80	80	79	77	76	75	73	70	65	58	102.1
2	5/27	Art. Sim.	61	Base		74	79	81	82	84	86	87	90	95	93	90	88	80	83	85	79	82	80	79	80	80	80	79	79	78	77	76	75	74	72	70	66	60	100.5
2	6/8	Art. Sim.	30.5	Base	77	75	80	84	86	87	87	95	91	97	101	99	95	96	91	89	90	88	88	88	89	89	88	88	87	88	87	85	84	82	80	77	73	71	107.0
6	5/27	Art. Sim.	30.5	Base	91	91	90	89	87	84	85	88	90	96	96	94	95	95	90	86	87	88	86	87	87	88	88	87	86	86	84	83	82	82	81	80	78	74	105.0
6	5/27	Art. Sim.	30.5	Cavity	73	82	84	89	85	87	91	91	88	89	94	98	108	102	95	96	95	93	92	93	90	87	86	85	83	80	79	79	76	75	74	72	70	68	110.6
6	5/27	Art. Sim.	61	Base	73	79	81	83	85	84	87	91	91	90	92	90	89	91	84	84	81	80	82	83	82	82	82	82	81	81	80	79	79	79	77	75	71	64	100.9
6	5/27	Art. Sim.	61	Cavity	55	82	85	83	81	79	83	87	86	86	90	92	102	98	90	94	89	90	85	89	83	83	79	82	79	75	76	74	73	71	69	68	67	64	105.7
6	5/27	Art. Sim.	122	Base	49	55	58	59	64	66	74	76	82	83	82	75	68	66	63	65	66	70	71	71	71	71	70	68	65	62	59	55	51	46	41		34	25	88.7
6	5/27	Art. Sim.	122	Cavity	65	68	70	71	76	77	78	81	85	88	89	92	100	93	87	84	85	85	80	86	76	76	73	75	70	65	64	63	59	56	51	46	43	39	102.6
41	5/26	Art. Sim.	30.5	Base	75	69	79	82	83	85	86	90	91	93	94	96	96	95	92	87	85	86	85	86	85	85	85	84	84	83	83	83	83	81	79	79	78	74	104.0
41	6/2	Live Clay-more	0	Base	56	58	63	66	66	69	73	78	81	86	87	85	88	81	77	76	75	75	77	77	80	79	80	79	79	77	76	74	72	71	69	66	59	43	95.0
41	6/2	Live Clay-more	0	Base	49	49	49	57	62	69	70	74	81	85	83	84	79	79	76	72	71	72	73	74	76	75	75	75	73	72	70	67	66	63	60	57	49	29	91.6
41	6/2	Art. Sim.	61	Base	64	64	70	74	81	84	85	89	91	93	93	94	89	90	86	79	84	80	80	80	79	80	79	79	79	79	77	76	75	74	72	69	66	59	101.0
44	5/27	Art. Sim.	61	Cavity	85	87	91	87	87	85	85	86	85	88	94	109	107	88	100	98	100	95	97	93	92	89	89	88	85	84	83	81	80	78	77	76	75	73	112.2
44	5/27	Art. Sim.	61	Base	76	78	80	81	84	86	88	90	96	97	95	92	91	95	86	87	84	83	84	83	83	83	83	83	83	83	81	80	80	78	77	75	71	65	103.9
44	5/27	Art. Sim.	30.5	Cavity	92	90	87	84	90	89	86	86	86	88	91	109	109	91	101	101	101	96	99	97	96	94	92	91	89	88	86	85	83	81	80	79	78	76	113.9
44	5/27	Art. Sim.	30.5	Base	90	90	90	90	88	85	83	89	89	91	95	93	94	96	92	91	91	90	88	87	86	87	88	87	88	86	86	85	85	84	85	84	82	77	105.0
44	5/27	Art. Sim.	15.2	Cavity	86	86	85	90	86	87	85	85	87	87	94	109	107	91	100	98	101	96	97	95	95	94	93	91	89	87	87	86	84	82	81	80	79	76	112.8
44	5/27	Art. Sim.	15.2	Base	81	90	91	92	93	92	93	93	92	92	95	96	99	96	96	91	89	86	89	87	88	88	89	89	88	88	87	87	86	85	85	84	83	78	106.8
47	4/26	Art. Sim.	30.5	Base	43	70	76	80	85	87	90	92	93	92	92	89	76	82	85	78	78	74	73	72	73	73	73	73	72	69	68	66	64	63	59	56	53	51	100.3
47	4/30	Art. Sim.	61	Base	67	73	78	78	81	85	85	91	91	96	98	92	92	90	83	84	83	82	81	82	81	81	81	81	81	80	78	77	75	75	71	68	66	57	102.9
47	5/3	Art. Sim.	30.5	Base	76	84	86	88	89	90	92	91	90	95	95	97	97	91	85	87	86	85	85	85	86	86	88	86	86	85	85	84	83	82	81	79	76	73	104.9
47	6/4	Art. Sim.	15.2	Base	75	71	76	79	92	94	94	93	95	94	95	97	93	94	92	90	92	89	90	91	91	89	89	88	88	88	87	87	86	86	85	85	83	79	106.3
47	6/4	Art. Sim.	15.2	Cavity	87	82	84	85	84	84	82	84	88	86	89	91	110	101	89	104	95	102	98	99	96	97	94	94	91	91	89	88	86	85	84	82	81	79	112.7
47	6/4	Art. Sim.	30.5	Base	78	80	83	83	84	85	89	91	93	98	96	96	97	91	85	87	85	84	85	83	84	84	85	85	85	85	84	83	84	83	82	80	78	73	104.8
47	6/4	Art. Sim.	30.5	Cavity	72	82	84	87	86	86	86	85	85	84	87	92	111	101	89	99	92	99	95	95	92	94	90	89	88	86	85	83	81	79	78	77	76	74	112.3
47	6/4	Art. Sim.	30.5	Cavity	77	82	84	85	85	85	81	81	83	86	86	90	110	100	85	100	92	99	94	94	91	93	89	87	85	85	82	80	79	79	76	76	74	72	111.6
47	6/4	Art. Sim.	30.5	Base	69	78	79	81	84	86	89	90	92	96	95	90	90	88	84	85	80	82	81	81	80	80	81	80	80	80	78	77	76	75	73	71	67	61	102.1

Col.	Date	Event	Event	Mic	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc.
		Type	Dist.	Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Overall
			(m)																																				SEL
47	6/11	Art. Sim.	30.5	Cavity	78	85	85	87	86	88	87	83	85	85	86	91	111	102	90	100	92	100	94	94	91	91	89	89	85	83	83	80	78	79	76	76	74	73	112.7
47	6/11	Art. Sim.	30.5	Base	83	85	85	87	85	83	81	87	91	97	94	95	93	93	91	88	84	85	84	84	85	86	85	84	84	84	82	81	80	79	77	74	71	66	103.9
47	6/11	Art. Sim.	61	Base	78	79	81	82	84	87	87	91	93	98	94	93	90	93	85	82	85	81	83	82	82	82	82	82	81	80	78	77	75	73	70	67	63	59	103.3
47	6/11	Art. Sim.	61	Cavity	84	86	86	87	87	85	82	80	83	86	87	91	111	101	88	99	92	101	91	95	91	90	90	88	84	84	82	81	79	78	76	75	74	72	112.8
47	6/11	Art. Sim.	30.5	Cavity	89	91	91	86	87	83	84	85	83	83	84	86	91	108	102	87	99	93	100	93	94	91	91	90	88	86	84	84	82	81	79	78	77	75	110.5
47	6/11	Art. Sim.	30.5	Base	80	83	84	85	85	83	83	82	85	93	94	97	93	90	89	88	83	85	83	84	83	83	83	83	82	81	79	79	77	76	74	73	69	66	102.5
47	6/11	Art. Sim.	61	Base	74	76	79	79	81	82	84	87	87	94	94	93	86	85	81	83	80	79	79	78	78	78	77	77	76	76	74	73	71	69	67	63	59	55	100.1
47	6/11	Art. Sim.	61	Cavity	78	77	74	74	76	75	76	78	80	84	89	91	91	106	101	89	92	88	92	89	87	86	83	80	81	77	76	74	72	70	69	68	66	64	108.1
48	4/23	Art. Sim.	122	Base	69	77	81	84	86	88	91	94	96	94	87	87	85	81	83	80	76	76	73	73	75	74	75	74	75	76	73	70	69	68	65	63	60	56	101.5
48	4/23	Art. Sim.	244	Base	69	73	76	80	82	85	88	90	91	90	88	86	84	76	74	75	72	68	70	69	71	72	72	71	71	72	70	70	67	64	62	58	54	51	97.9
48	4/27	Art. Sim.	61	Base	80	82	85	86	88	89	92	92	95	97	93	93	92	88	86	86	84	81	82	81	81	81	81	81	81	80	80	78	78	76	71	68	65	65	103.6
48	6/2	Art. Sim.	30.5	Base	94	93	90	85	85	87	89	88	90	95	94	93	94	92	89	88	86	82	83	85	85	85	84	84	83	83	82	81	81	80	79	77	75	72	104.0
48	6/2	Art. Sim.	30.5	Cavity	93	93	88	88	88	87	84	87	86	88	92	104	109	90	97	101	98	94	96	95	94	92	90	89	88	87	85	83	82	81	80	78	77	75	112.1
48	6/2	Art. Sim.	61	Cavity	88	86	87	89	85	85	85	85	85	90	92	105	108	90	97	99	99	93	94	93	91	89	88	87	85	84	82	83	81	80	78	76	75	73	111.4
48	6/2	Art. Sim.	61	Base	80	82	84	86	87	88	91	93	94	93	94	91	93	90	85	84	85	82	81	81	81	81	81	81	81	81	79	80	79	79	77	74	70	64	102.8
51	5/26	Art. Sim.	15.2	Base	81	81	85	89	92	92	93	95	96	96	98	98	100	100	96	94	93	92	93	93	93	92	93	93	92	91	91	91	87	86	85	84	79	78	109.0
51	5/26	Art. Sim.	15.2	Cavity	71	89	87	88	87	90	84	87	87	90	93	95	109	103	93	103	97	101	99	100	97	97	95	94	92	91	91	89	87	86	85	83	82	81	113.0
51	5/26	Art. Sim.	30.5	Cavity	87	93	94	91	91	90	90	88	88	90	91	95	110	105	93	101	94	101	96	97	98	95	94	91	89	89	88	87	85	83	81	81	80	77	113.3
51	5/26	Art. Sim.	30.5	Base	81	84	85	85	86	86	88	91	93	96	96	98	97	96	96	92	92	90	88	88	88	89	89	89	88	87	88	86	83	82	81	78	75	74	106.4
52	5/13	Art. Sim.	15.2	Base	88	89	91	91	90	91	92	93	97	100	99	95	96	96	91	92	91	90	89	91	91	91	90	90	90	90	88	86	87	84	82	81	74	50	107.8
52	5/13	Art. Sim.	15.2	Cavity	75	75	88	89	91	90	88	91	94	93	96	100	101	99	95	98	93	91	93	91	90	89	86	88	87	85	86	83	82	79	78	77	70	49	108.2
52	5/13	Art. Sim.	30.5	Base	80	81	82	81	82	82	90	92	94	95	98	94	90	92	88	89	85	86	86	86	87	87	87	86	85	85	83	82	81	78	76	75	68	45	104.1
52	5/13	Art. Sim.	30.5	Cavity	91	91	91	88	87	90	92	88	91	93	91	93	98	93	93	96	93	88	90	88	85	84	84	87	82	81	81	77	77	75	75	73	66	42	105.6
52	5/13	Art. Sim.	61	Base	70	78	81	83	85	87	89	92	92	92	89	89	81	80	83	82	78	80	79	79	81	80	80	79	79	77	75	73	72	69	66	62	53	36	99.8
52	5/13	Art. Sim.	61	Cavity	69	77	78	79	80	79	83	87	91	93	88	99	100	96	83	89	88	82	84	80	78	75	76	82	75	74	74	69	66	63	63	59	50	30	104.7
52	5/13	Art. Sim.	30.5	Cavity	79	80	78	74	74	80	76	77	80	79	80	78	84	99	95	84	85	85	87	85	86	83	82	82	81	82	81	80	81	80	81	72	71	70	101.8
52	5/13	Art. Sim.	30.5	Base	70	74	75	75	78	78	77	77	85	85	86	85	87	82	76	79	79	80	81	81	82	81	81	81	80	80	79	77	77	75	74	70	68	67	95.9
52	5/13	Art. Sim.	61	Cavity	82	72	75	75	71	72	73	72	73	73	74	75	77	93	89	80	84	82	84	81	83	80	80	79	78	79	78	77	77	76	77	68	67	66	96.8
52	5/13	Art. Sim.	61	Base	66	61	63	70	68	72	75	75	75	79	77	78	81	76	71	72	75	75	77	79	80	81	80	80	79	78	77	75	74	72	70	66	63	60	91.6
71	6/7	Art. Sim.	61	Base	64	75	79	82	84	86	86	89	90	90	90	87	83	79	81	80	73	74	71	73	72	72	72	72	72	70	69	67	65	63	60	53	49	42	98.0
71	6/7	Art. Sim.	61	Cavity	59	73	76	80	81	82	81	84	87	89	95	97	88	83	83	85	78	79	75	74	70	69	75	68	64	65	59	58	52	50	44	41	44		100.8
71	6/7	Art. Sim.	122	Cavity	67	71	75	77	77	78	78	81	85	90	94	95	84	73	76	81	77	66	69	65	64	62	67	61	57	56	51	51	43	47	45		35		99.1
71	6/7	Art. Sim.	122	Base		58	71	74	79	79	81	84	86	88	88	86	79	70	71	70	69	65	63	64	65	66	67	67	66	64	64	61	57	55	48		41		94.3
75	4/28	Art. Sim.	122	Base	74	74	79	81	84	86	89	91	93	92	92	88	78	77	84	79	74	74	73	74	75	75	76	75	73	72	71	69	67	65	61	55	51	37	99.8
75	5/3	Art. Sim.	61	Base	79	82	84	86	88	89	90	93	93	92	91	89	93	85	82	83	82	79	80	79	79	79	79	80	78	78	76	75	73	71	68	66	62	57	101.7
75	5/6	Art. Sim.	91.5	Base	72	77	80	82	84	86	88	90	92	94	94	90	85	76	81	83	75	76	73	74	74	74	74	74	73	72	71	69	66	64	60	54	49		100.4
75	6/7	Art. Sim.	61	Base	78	80	80	81	83	83	87	90	94	95	93	91	86	88	83	82	82	77	79	78	78	78	79	78	77	78	76	76	74	73	71	69	65	59	101.2

Col.	Date	Event	Event	Mic	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																	Calc.
		Type	Dist.	Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Overall
			(m)																																				SEL
75	6/7	Art. Sim.	61	Cavity	71	74	74	72	75	78	77	81	83	86	90	97	109	94	86	84	87	96	84	91	86	84	83	80	77	74	71	68	65	62	58	53	52	47	109.8
75	6/7	Art. Sim.	91.5	Cavity	69	73	72	70	74	75	76	80	82	85	87	94	105	87	75	81	85	90	80	82	78	76	72	71	69	68	66	65	64	62	60	56	52	45	105.3
75	6/7	Art. Sim.	91.5	Base	66	72	74	73	74	76	79	81	83	85	88	94	105	88	75	81	86	90	80	83	78	76	73	72	70	69	67	66	65	63	61	57	53	45	106.0
79	5/6	Art. Sim.	30.5	Base	80	79	78	72	74	78	84	86	93	94	94	92	97	91	88	84	86	86	86	86	86	85	84	86	85	84	83	81	82	82	81	78	75	71	103.3
79	5/13	Art. Sim.	30.5	Base	87	87	86	85	86	84	88	89	91	92	95	98	93	90	88	83	86	87	86	87	87	87	86	86	85	85	84	83	83	83	82	79	75	71	104.1
79	6/14	Art. Sim.	30.5	Base	84	84	83	83	83	87	90	91	95	98	100	98	99	96	90	89	87	87	88	89	90	90	89	90	89	90	88	87	86	85	85	79	77	75	107.4
79	6/14	Art. Sim.	30.5	Cavity	88	90	90	87	91	92	92	88	90	91	98	99	113	102	92	98	92	102	94	97	97	95	94	96	93	95	95	93	94	93	94	83	82	81	114.6
79	6/17	Art. Sim.	61	Base	79	81	83	85	82	81	83	80	86	87	88	81	79	73	66	68	70	73	75	76	76	76	76	74	73	72	69	67	65	63	59	56	52	51	95.3
80	5/17	Art. Sim.	61	Base	66	65	60	64	69	76	78	82	85	85	86	85	80	78	77	77	75	77	78	79	79	79	79	79	78	78	77	76	75	73	72	70	68	67	94.4
80	5/21	Art. Sim.	30.5	Base	74	82	86	86	88	91	94	94	94	95	93	92	91	89	85	87	84	85	84	83	85	85	85	84	84	83	82	80	78	76	73	69	64	50	103.6
81	5/6	Art. Sim.	30.5	Base	78	82	85	85	83	85	88	93	95	97	97	90	90	89	86	85	82	84	84	84	84	84	83	82	82	82	80	79	78	77	74	71	67	60	103.5
86	5/4	Art. Sim.	30.5	Base	82	83	86	85	86	85	88	88	89	92	95	96	93	91	91	89	91	89	86	85	85	86	85	85	85	84	83	81	80	78	77	75	72	69	103.6
86	5/4	Art. Sim.	30.5	Base	82	85	86	86	87	86	88	89	90	92	95	96	93	91	91	89	91	90	86	85	85	86	86	85	85	84	83	82	80	79	77	75	73	70	104.0
86	5/9	Art. Sim.	61	Base	78	76	76	75	72	75	78	81	86	90	88	89	86	81	78	77	77	77	78	79	79	79	79	79	78	78	76	74	73	72	72	61	58	56	96.7
86	5/12	Art. Sim.	30.5	Base	79	81	82	83	83	81	83	88	93	96	95	90	94	92	86	85	84	84	81	82	82	81	82	81	80	80	79	78	78	77	76	75	72	68	102.5
87	4/23	Art. Sim.	122	Base	72	73	77	78	81	84	85	86	88	90	89	89	81	76	76	80	72	72	71	71	72	71	72	71	71	69	66	64	62	59	55	49	43	35	96.8
87	4/27	Art. Sim.	61	Base	82	84	85	88	90	91	92	91	94	94	94	95	94	93	89	83	86	84	83	84	84	84	84	84	83	82	81	79	78	77	77	77	78	80	104.1
87	4/30	Art. Sim.	30.5	Base	79	83	84	86	87	88	90	89	93	98	99	96	95	97	94	90	89	87	89	88	87	87	88	89	88	86	83	84	82	80	80	78	79	79	106.3
87	6/3	Art. Sim.	30.5	Base	69	80	84	87	90	92	93	94	96	100	95	96	90	92	86	89	82	85	82	82	81	81	83	82	82	82	81	79	79	77	75	72	68	61	105.5
87	6/3	Art. Sim.	30.5	Cavity		78	82	83	86	85	82	87	88	95	96	98	102	103	100	93	93	94	93	100	89	88	82	86	86	87	85	83	81	79	77	75	76	74	109.2
87	6/3	Art. Sim.	61	Base	67		64	70	86	89	91	91	89	93	95	90	96	91	85	84	86	82	82	81	81	83	82	83	82	83	81	79	79	78	76	75	72	66	102.7
87	6/3	Art. Sim.	61	Cavity		78	81	83	88	88	89	89	88	91	89	93	97	102	97	93	94	92	91	94	92	88	87	89	86	86	84	84	81	80	78	79	76	75	106.8
103	5/13	Live Clay-more	0	Base		59	66	70	73	74	73	71	65	67	65	62	64	65	58	54	52	57	54	50	51	48	41	42	43	23	39	38		31	23		28		80.4
103	5/13	Live Clay-more	0	Base	61	65	69	72	74	75	75	72	66	65	67	60	56	59	53	51	44	51	49	47	50	48	43	44	43	-233	40	37		26					81.4
103	5/13	Live Clay-more	0	Base	49	60	66	71	74	76	78	74	68	69	63	56	60	61	59	53	49	51	49	48	51	49	41	43	43	26	40	37		32			26		82.7
103	5/13	Live Clay-more	0	Base	41	38	49	52	69	73	73	71	64	66	66	62	59	56	56	52	53	53	51	50	52	50	46	45	43	33	38	36		30	27		25		78.8
103	5/13	Live Clay-more	0	Base	63	67	70	74	75	76	78	74	68	69	63	58	60	61	59	54	49	52	50	50	52	50	44	43	43	36	41	36		34	20		27		83.3
103	5/13	Live Clay-more	0	Base	54	60	64	66	67	69	69	69	69	66	67	66	64	63	63	61	57	58	55	57	59	58	59	58	57	53	51	47	34	36	27		31		78.7

Col.	Date	Event	Event	Mic	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc.
		Type	Dist.	Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Overall
			(m)																																				SEL
103	5/13	Live Clay-more	0	Base			46	43		50	40		49	46	45	50	47	47	53	55	62	62	66	66	74	73	75	77	77	77	75	72	70	69	67	62	60	43	84.8
103	5/13	Live Clay-more	0	Base	41	61	66	71	72	70	70	68	67	62	60	53	51	54	49	49	43	48	47	45	48	47	37	40	40		37	34		20			20	20	78.4
107	5/5	Art. Sim.	30.5	Base	65	81	84	86	88	88	88	91	91	94	95	97	94	92	91	90	91	87	86	89	88	88	88	89	87	87	86	82	83	80	77	76	74	70	104.5
107	5/10	Art. Sim.	61	Base	78	80	82	85	86	88	91	93	92	94	92	89	92	88	83	84	83	81	82	81	81	82	82	82	81	80	79	76	74	71	67	64	59	54	101.9
107	5/12	Art. Sim.	30.5	Base	87	88	89	90	91	90	89	92	91	91	97	93	94	94	93	91	87	86	86	88	87	87	88	88	88	86	85	84	83	82	80	78	75	72	105.1
107	6/17	Art. Sim.	30.5	Base	81	83	86	87	88	86	89	88	86	91	95	94	93	92	92	92	91	87	87	87	85	85	87	86	86	85	84	83	82	81	80	79	76	71	103.8
107	6/17	Art. Sim.	30.5	Cavity	82	89	89	84	86	83	84	85	86	86	87	92	106	108	93	98	100	99	96	98	97	96	93	92	90	88	86	84	83	82	80	79	78	75	112.3
107	6/17	Art. Sim.	61	Base	74	77	76	81	82	83	84	87	86	91	93	91	86	87	84	84	79	79	78	79	78	79	78	78	79	78	76	75	74	72	71	68	65	59	99.3
107	6/17	Art. Sim.	61	Cavity	82	85	82	85	85	80	78	81	82	80	87	92	107	107	90	96	96	99	92	95	93	92	90	87	84	83	82	79	78	76	75	74	73	70	111.3
107	6/17	Art. Sim.	61	Cavity	73	72	78	85	82	78	79	77	79	79	81	85	90	100	86	84	91	82	88	84	85	81	80	78	75	75	74	72	70	70	68	66	65	63	101.9
107	6/17	Art. Sim.	61	Base	61	60	61	69	75	77	81	82	84	82	82	87	86	87	79	80	79	77	75	77	75	76	77	77	77	76	74	74	75	72	70	69	67	63	94.9
107	6/17	Art. Sim.	30.5	Base	84	86	87	89	91	93	93	96	95	100	102	101	95	96	93	93	89	89	88	88	87	88	88	88	88	87	85	85	83	82	80	78	74	68	108.6
107	6/17	Art. Sim.	30.5	Cavity	80	81	77	82	78	81	83	87	89	91	96	100	105	117	101	94	94	98	104	93	97	93	92	90	87	87	85	84	84	83	78	75	73	75	117.8
125	5/13	Art. Sim.	15.2	Base	79	79	80	80	79	80	85	84	88	93	94	94	94	89	93	88	88	87	86	86	86	86	86	87	86	85	84	83	83	81	81	74	71	67	103.0
125	5/13	Art. Sim.	15.2	Cavity	85	82	86	82	85	81	86	82	85	87	92	103	102	89	92	92	93	90	91	90	90	87	84	86	85	86	85	84	84	84	85	72	72	72	107.1
125	5/13	Art. Sim.	30.5	Base	73	76	75	71	76	78	76	83	86	87	90	89	86	85	82	83	81	81	81	82	83	82	83	82	82	81	80	79	78	77	77	72	71	69	97.9
125	5/13	Art. Sim.	30.5	Cavity	83	85	82	79	81	75	77	79	83	85	90	95	93	84	85	84	87	83	84	85	82	80	79	82	79	82	80	79	80	79	81	69	68	67	100.3
125	5/13	Art. Sim.	61	Base	67	70	71	67	68	70	73	77	80	78	84	81	77	76	71	72	74	75	75	77	78	78	78	78	77	76	74	73	71	70	69	64	61	60	91.3
125	5/13	Art. Sim.	61	Cavity	71	68	69	74	70	72	71	76	78	79	82	87	90	80	77	78	80	78	82	83	79	76	75	76	74	75	74	73	73	72	73	63	61	60	94.7
125	5/13	Art. Sim.	15.2	Base	83	83	86	87	85	87	85	89	93	97	95	91	91	87	83	85	81	82	85	86	85	86	86	86	85	86	84	82	82	81	81	75	73	72	103.3
125	5/13	Art. Sim.	15.2	Cavity	79	84	80	83	80	86	86	86	84	86	89	91	96	103	92	89	93	89	90	91	88	88	85	86	84	85	84	82	83	82	83	73	72	71	106.1
125	5/13	Art. Sim.	30.5	Base	75	81	81	84	79	81	85	90	92	93	95	90	89	86	84	83	83	83	84	85	85	85	86	85	85	85	84	82	82	80	80	74	72	71	101.9
125	5/13	Art. Sim.	30.5	Cavity	77	84	86	86	76	79	83	85	85	88	88	89	95	102	91	85	88	85	86	87	84	82	82	83	81	82	82	81	81	81	82	73	71	71	104.3
125	5/13	Art. Sim.	61	Base	69	71	71	69	68	69	71	74	80	81	82	80	79	75	71	72	71	71	72	73	73	74	74	73	73	73	71	69	68	67	66	57	53	51	89.8
125	5/13	Art. Sim.	61	Cavity	68	73	70	70	70	69	72	73	75	77	79	80	85	93	84	78	80	77	81	80	77	76	75	76	74	76	75	73	74	73	74	63	62	61	95.7
126	5/4	Art. Sim.	30.5	Base	81	82	83	83	80	81	79	86	92	93	97	95	98	98	90	94	90	87	86	87	86	87	86	87	85	84	84	83	81	81	78	76	75	72	105.4
126	5/9	Art. Sim.	61	Base	68	80	82	84	86	87	90	92	94	95	91	92	93	85	81	85	81	80	79	79	80	79	79	79	78	77	75	74	71	69	66	62	60	55	102.1
126	5/13	Art. Sim.	30.5	Base	85	86	88	88	87	83	84	87	92	95	96	95	94	92	90	89	87	85	86	84	85	87	87	87	86	86	85	84	83	82	82	79	77	74	104.2
137	5/4	Art. Sim.	30.5	Base	65			71	82	84	88	92	91	95	96	93	97	87	82	86	86	83	83	83	83	83	83	82	81	80	78	77	75	72	69	65	61	51	103.4
137	5/26	Art. Sim.	30.5	Base	75	85	86	87	81	88	89	90	91	96	97	92	94	88	86	86	84	85	85	84	83	84	82	82	82	81	80	79	78	79	77	75	72	62	103.6
137	6/1	Art. Sim.	15.2	Base	86	83	86	89	87	85	86	86	85	86	90	90	87	86	85	87	87	86	85	87	87	83	86	85	84	83	82	81	79	76	76	75	72	71	100.8
137	6/1	Art. Sim.	15.2	Base	86	83	86	89	87	85	86	86	85	86	90	90	87	86	85	87	87	86	85	87	87	83	86	85	84	83	82	81	79	76	76	75	72	71	100.8
143	5/27	Art. Sim.	30.5	Base	83	89	88	85	84	86	86	88	94	93	94	93	93	87	84	82	83	84	83	85	84	85	84	85	84	83	81	81	81	80	79	78	76	71	102.7
143	5/27	Art. Sim.	30.5	Cavity	81	80	83	82	81	80	81	82	82	81	83	93	109	91	85	100	89	98	96	95	94	92	90	88	86	86	85	83	81	80	79	77	76	74	110.9

Col.	Date	Event Type	Event Dist. (m)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
143	5/27	Art. Sim.	15.2	Base	84	86	87	88	90	91	92	93	95	94	97	95	97	91	91	88	88	87	87	87	88	89	88	87	87	87	85	84	84	83	83	81	79	75	105.6
143	5/27	Art. Sim.	15.2	Cavity	88	84	82	85	85	83	83	85	85	87	88	95	108	92	89	101	90	98	94	94	93	90	90	88	86	85	84	83	81	80	80	77	76	73	109.8
159	5/3	Art. Sim.	61	Base	78	82	84	86	87	89	91	92	94	92	92	92	94	86	85	84	84	80	83	82	83	82	84	83	83	83	82	80	78	76	71	66	61	59	102.5
159	5/6	Art. Sim.	30.5	Base	90	92	92	93	92	92	93	94	97	101	105	101	103	102	97	98	96	93	93	92	93	94	94	94	93	92	91	89	88	87	85	83	79	77	111.6
159	6/17	Art. Sim.	30.5	Base	86	86	87	88	88	90	91	90	95	93	96	99	100	92	93	93	90	88	90	88	88	88	88	88	87	87	86	86	85	84	83	83	80	76	106.8
159	6/17	Art. Sim.	30.5	Cavity	89	90	92	93	86	86	87	86	86	88	89	95	112	107	92	102	97	100	97	98	96	96	93	93	91	88	87	86	86	84	81	80	78	76	114.5
159	6/17	Art. Sim.	61	Cavity	72	70	71	75	77	79	81	83	85	87	90	94	114	108	94	90	89	101	91	97	92	93	88	89	89	86	84	83	80	77	77	77	75	73	115.2
159	6/17	Art. Sim.	61	Base	79	81	82	85	86	89	89	91	94	96	94	93	89	88	87	86	83	83	83	83	83	83	83	83	83	82	81	80	79	79	77	75	71	66	103.0
172	4/23	Art. Sim.	122	Base	74	77	79	82	84	87	89	92	93	93	94	86	86	82	82	82	75	77	75	75	76	76	75	74	73	73	71	69	67	65	62	58	54	49	100.5
172	4/27	Art. Sim.	61	Base	77	81	83	85	86	87	87	89	92	94	93	88	91	92	79	83	83	80	81	81	81	81	81	80	79	78	77	75	74	71	69	67	66	67	101.4
172	5/3	Art. Sim.	61	Base	81	83	84	84	84	83	88	92	93	95	94	93	94	94	88	90	90	88	85	86	85	85	86	85	84	83	81	79	78	76	74	71	69	67	103.9
172	6/4	Art. Sim.	15.2	Base	88	90	91	92	91	90	92	90	93	93	94	99	96	97	95	90	90	87	90	88	89	89	88	88	89	88	87	86	86	85	86	84	83	79	106.7
172	6/4	Art. Sim.	15.2	Cavity	86	84	88	87	87	86	84	82	83	83	87	92	112	98	87	103	91	101	98	98	95	96	95	93	92	90	89	88	86	85	84	84	81	79	113.5
172	6/4	Art. Sim.	30.5	Base	91	92	91	87	86	82	85	90	91	94	91	92	95	94	90	88	89	89	87	86	86	90	89	88	87	86	85	85	84	84	83	82	80	76	104.6
172	6/4	Art. Sim.	30.5	Cavity	89	90	85	86	87	88	85	84	85	85	88	93	111	97	88	103	91	101	98	97	96	95	94	93	91	88	87	87	84	84	82	81	79	77	113.0
172	6/4	Art. Sim.	61	Base	62	74	80	82	88	90	91	92	96	96	90	90	93	88	83	85	84	82	83	82	81	82	82	82	82	81	80	79	78	77	75	73	70	64	102.9
172	6/4	Art. Sim.	61	Cavity	55	76	80	83	86	83	80	83	84	83	83	91	111	97	88	102	91	101	95	96	91	91	91	90	89	87	84	81	82	80	79	78	77	74	112.4
177	5/9	Art. Sim.	61	Base	77	79	78	77	79	80	81	82	83	89	88	88	82	78	77	76	77	78	80	80	81	81	80	80	79	79	77	76	75	74	74	65	61	57	96.4
177	5/11	Art. Sim.	30.5	Base	78	82	83	84	84	87	89	90	93	97	95	96	95	90	90	89	91	89	85	87	87	85	86	86	85	84	83	82	81	81	80	79	73	59	104.8
177	5/17	Art. Sim.	30.5	Base		79	83	85	88	89	91	91	91	95	96	97	95	88	87	86	86	84	85	86	85	85	85	85	84	84	82	81	80	79	78	75	73	70	104.4
177	6/11	Art. Sim.	30.5	Cavity	88	84	86	88	88	86	85	84	85	88	89	94	109	94	88	99	89	99	93	94	93	89	89	88	86	85	83	82	80	79	78	77	76	73	110.4
177	6/11	Art. Sim.	30.5	Base	69	83	85	85	85	82	78	86	93	98	96	92	90	93	85	83	86	84	83	84	85	84	84	85	83	83	81	80	78	76	75	72	69	64	103.5
177	6/11	Art. Sim.	61	Base	77	80	82	84	84	86	87	89	90	94	95	91	87	88	83	82	83	80	81	80	80	80	80	79	78	78	76	74	72	71	69	66	62	59	101.3
177	6/11	Art. Sim.	61	Cavity	71	68	72	74	74	76	78	80	82	86	89	96	109	93	82	82	88	96	82	91	86	85	83	79	76	73	69	70	69	66	62	60	59	57	109.5
177	6/11	Art. Sim.	30.5	Cavity	84	89	93	93	91	87	87	84	87	89	89	91	104	103	91	98	93	98	93	95	93	91	89	88	86	86	84	82	81	79	78	77	76	74	109.3
177	6/11	Art. Sim.	30.5	Base	85	86	87	88	90	91	92	91	93	91	95	95	96	96	92	94	93	89	89	89	91	89	88	89	88	88	86	85	83	82	80	78	76	72	105.8
177	6/11	Art. Sim.	61	Base	75	77	79	80	81	82	86	89	92	93	90	89	84	79	76	79	76	77	75	76	75	76	75	75	74	73	72	70	69	68	65	62	59	56	98.8
177	6/11	Art. Sim.	61	Cavity	71	74	76	77	77	74	76	78	84	85	87	90	101	100	85	80	82	89	80	82	79	77	77	75	69	67	69	67	63	58	52	50	52	52	104.1
179	4/23	Art. Sim.	122	Base	73	75	79	80	82	85	86	89	93	94	93	89	83	81	83	81	75	76	75	76	75	75	75	74	73	72	68	65	63	59	56	51	46	36	100.0
179	4/28	Art. Sim.	61	Base	76	76	77	77	77	81	81	84	89	94	93	88	87	87	84	79	80	79	81	81	82	81	80	82	80	81	79	77	77	76	76	65	61	60	99.8
179	6/7	Art. Sim.	61	Cavity	67	76	77	74	80	83	84	85	89	90	92	94	109	111	93	87	91	98	90	92	89	86	84	82	79	76	74	72	69	65	61	58	55	47	113.7
179	6/7	Art. Sim.	61	Base	69	81	83	85	88	89	92	92	94	96	94	94	90	83	86	86	80	83	81	81	79	80	79	79	79	78	77	75	73	71	68	65	61	55	103.0
179	6/7	Art. Sim.	122	Cavity	74	74	76	78	80	82	83	86	88	87	89	89	104	106	85	83	88	88	82	84	76	74	70	71	69	66	64	60	58	54	51	45	46	36	108.4
179	6/7	Art. Sim.	122	Base	55	54	56		81	85	89	92	93	93	91	86	79	77	83	78	71	70	68	67	67	66	66	65	65	64	62	60	57	55	49	38	38		99.6
183	5/4	Art. Sim.	30.5	Base		69	77	79	85	87	90	90	95	94	96	89	84	84	87	84	81	82	80	80	79	79	79	79	78	78	76	74	71	67	63	57	54		101.9
183	5/10	Art. Sim.	15.2	Base	82	85	87	88	89	91	90	89	91	93	94	92	90	91	87	87	85	88	89	89	88	87	87	87	86	86	84	82	80	79	79	76	76	75	103.6
183	6/7	Art. Sim.	15.2	Base	86	86	89	92	92	91	93	94	95	94	95	97	97	94	90	88	87	86	86	86	86	84	85	85	86	86	84	84	84	84	82	82	81	78	105.8

Col.	Date	Event	Event	Mic	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc.
		Type	Dist.	Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Overall
			(m)																																				SEL
183	6/7	Art. Sim.	15.2	Cavity	90	91	88	83	86	88	87	85	83	85	87	89	102	104	87	96	97	98	92	96	92	94	92	90	88	88	86	84	83	82	81	79	78	76	109.0
183	6/7	Art. Sim.	30.5	Cavity	74	87	91	89	87	85	88	84	88	87	90	93	102	104	89	96	95	97	93	93	92	91	88	87	86	83	83	82	79	79	77	76	75	73	108.6
183	6/7	Art. Sim.	30.5	Base	69	82	84	85	85	84	85	93	93	90	97	95	92	92	88	92	90	86	86	85	86	85	85	86	85	85	84	82	81	81	80	79	76	72	104.0
183	6/7	Art. Sim.	61	Base	66	76	79	82	85	87	89	93	93	92	93	90	87	89	81	85	82	80	80	79	79	79	79	79	79	77	77	76	75	74	73	71	67	61	101.2
183	6/7	Art. Sim.	61	Cavity	63	69	71	71	73	79	82	85	84	83	91	92	105	105	88	86	89	96	90	90	88	87	83	84	82	79	78	76	75	73	72	71	70	67	108.8
184	4/23	Art. Sim.	244	Base	34	37	47	48	67	71	75	88	92	94	91	79	76	75	77	66	64	64	62	63	62	65	61	61	61	58	58	54	51	47	41	35	38	37	97.7
184	4/27	Art. Sim.	122	Base			62	67	78	82	85	88	91	93	94	90	83	76	79	82	73	73	69	69	70	70	70	70	71	70	69	67	64	63	59	54	50	37	99.1
194	5/26	Art. Sim.	15.2	Base	88	85	89	92	92	92	93	93	96	97	98	99	98	93	92	93	91	91	90	87	89	89	88	89	87	86	84	84	83	81	80	77	74	69	107.3
194	5/26	Art. Sim.	15.2	Cavity	93	91	87	85	90	85	87	87	87	91	97	112	95	90	103	94	102	98	98	98	95	94	93	92	90	89	87	87	85	84	83	81	80	78	113.8
194	5/26	Art. Sim.	30.5	Cavity	86	91	91	90	86	86	89	86	88	91	99	113	95	91	104	94	101	97	98	96	92	92	90	90	90	87	86	85	84	83	81	80	78	75	114.5
194	5/26	Art. Sim.	30.5	Base	85	84	85	87	88	91	89	96	93	99	99	96	93	96	92	92	89	87	85	87	90	89	88	88	88	86	84	83	81	80	79	75	74	71	106.4
197	5/6	Art. Sim.	30.5	Base	52	60	67	69	81	83	82	86	88	93	99	94	94	90	89	88	83	83	83	83	84	83	82	84	83	83	82	82	81	80	80	75	72	68	103.2
197	5/10	Art. Sim.	61	Base	73	76	79	81	82	80	75	75	85	90	91	92	88	82	72	74	75	73	74	73	74	74	74	75	75	75	74	70	68	67	64	61	59	52	97.7
197	5/12	Art. Sim.	30.5	Base	52	62	67	78	83	84	84	82	83	89	93	95	95	87	85	83	83	81	80	80	83	82	82	83	81	81	81	79	79	78	79	73	70	66	101.0
197	6/18	Art. Sim.	61	Base	58	70	72	73	73	74	75	76	77	81	84	90	103	91	78	78	81	90	79	87	82	82	79	76	74	73	69	67	67	65	63	62	60	56	103.6
197	6/18	Art. Sim.	61	Cavity	73	74	73	70	72	76	77	76	78	81	84	90	103	91	78	79	82	91	79	87	82	82	80	77	75	74	70	68	67	65	64	63	60	58	104.1
197	6/18	Art. Sim.	61	Cavity	81	87	89	89	85	84	82	85	85	85	84	87	96	105	99	89	97	91	92	90	90	86	83	82	82	81	78	77	75	74	73	71	70	68	107.8
197	6/18	Art. Sim.	61	Base	77	83	84	86	87	89	89	89	93	95	89	89	91	85	81	83	82	81	82	82	82	81	81	82	80	80	79	77	77	77	76	74	71	66	101.6
197	6/18	Art. Sim.	30.5	Base	89	85	86	89	89	89	92	93	92	91	90	95	99	92	90	89	89	86	86	87	87	88	87	88	87	86	85	83	83	82	82	81	79	76	105.0
197	6/18	Art. Sim.	30.5	Cavity	86	88	84	88	88	90	86	85	88	87	90	90	93	105	96	91	97	91	91	92	91	89	87	85	81	82	82	80	79	77	76	74	73	71	107.8
198	4/23	Art. Sim.	122	Base	72	75	79	81	84	86	88	89	92	94	93	92	84	78	82	83	74	79	75	76	76	77	78	77	77	75	73	71	70	67	65	62	59	55	100.3
198	4/27	Art. Sim.	61	Base	72	79	81	83	86	87	90	91	94	95	95	95	93	89	87	87	85	81	83	82	82	83	82	83	82	81	79	78	77	74	72	68	65	63	103.3
198	4/30	Art. Sim.	30.5	Base	85	85	84	80	82	84	83	90	91	93	97	95	96	96	90	87	91	86	85	85	86	86	86	86	86	85	84	83	82	81	81	74	71	69	104.6
198	6/11	Art. Sim.	30.5	Base	83	85	86	87	88	88	86	85	87	90	94	92	94	91	92	89	90	87	82	84	84	84	84	83	82	83	81	80	79	76	76	74	73	69	102.7
198	6/11	Art. Sim.	30.5	Cavity	86	86	86	87	88	82	82	83	84	84	92	106	99	87	98	93	97	92	94	91	90	87	86	85	84	81	80	79	77	76	75	74	73	71	108.7
198	6/11	Art. Sim.	61	Cavity	62	67	70	70	73	75	75	77	81	83	89	107	98	81	82	78	94	80	88	81	84	80	78	75	72	69	67	65	61	59	56	52	51	51	107.6
198	6/11	Art. Sim.	61	Base	75	77	79	81	82	83	82	84	86	88	92	91	88	84	81	80	80	78	77	76	76	77	77	76	75	75	73	71	70	68	65	62	59	56	98.3
198	6/11	Art. Sim.	30.5	Base	81	85	87	88	91	92	93	94	93	96	97	99	94	90	89	88	86	85	85	84	84	85	84	84	83	83	81	81	79	77	74	72	70	67	105.6
198	6/11	Art. Sim.	30.5	Cavity	89	91	91	87	89	84	86	84	83	88	89	106	103	90	100	96	101	95	96	94	94	91	88	89	87	85	83	82	81	79	78	77	76	74	110.7
198	6/11	Art. Sim.	61	Base	68	78	81	84	86	88	88	89	94	97	92	90	91	85	83	85	80	82	79	79	80	80	81	80	79	78	77	75	73	72	69	66	63	58	102.1
198	6/11	Art. Sim.	61	Cavity	79	77	73	71	80	83	81	84	84	88	91	106	104	91	92	91	96	90	90	90	88	86	83	81	82	79	76	76	74	73	72	71	70	68	109.2
199	5/11	Art. Sim.	15.2	Base	96	98	100	99	99	102	101	101	102	103	103	103	99	102	99	99	95	96	95	97	96	95	94	94	93	92	92	90	89	88	86	85	82	78	113.5
199	5/11	Art. Sim.	15.2	Cavity	91	96	102	104	102	98	94	95	95	96	97	99	101	111	113	99	103	105	102	99	100	98	97	96	94	92	93	91	88	87	85	85	84	81	117.5
199	5/11	Art. Sim.	30.5	Base	78	81	83	85	87	88	90	90	90	92	91	94	95	93	91	92	92	86	87	87	87	86	85	85	84	83	82	81	78	78	76	74	72	69	103.6
199	5/11	Art. Sim.	30.5	Cavity	80	89	93	91	91	88	86	85	87	86	90	90	96	102	105	95	95	98	95	95	92	93	91	90	87	84	84	84	82	80	79	78	76	74	109.7
199	5/11	Art. Sim.	61	Base	51	71	74	76	78	79	81	83	87	88	84	82	84	85	79	75	79	75	74	74	73	74	74	74	72	71	69	68	67	64	60	57	53	45	94.9
199	5/11	Art. Sim.	61	Cavity	70	81	82	80	72	77	79	77	82	81	83	80	85	95	98	83	87	90	87	83	84	81	79	78	76	76	73	71	70	69	68	66	65	63	101.5

Col.	Date	Event	Event	Mic	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc.
		Type	Dist.	Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Overall
			(m)																																				SEL
199	5/11	Art. Sim.	61	Base	62	76	80	83	86	86	88	91	93	95	96	93	89	90	88	85	85	82	85	89	86	84	85	84	84	82	79	80	78	76	74	69	64	58	103.1
199	5/11	Art. Sim.	61	Cavity	64	80	84	87	89	89	89	84	84	93	92	95	93	95	97	91	90	89	88	87	88	86	83	83	84	81	78	76	71	71	74	70	69	67	104.3
199	5/11	Art. Sim.	30.5	Base	82	84	85	85	85	85	88	91	93	94	90	95	90	92	90	90	91	90	87	88	88	89	89	88	87	86	86	85	84	83	81	80	76	73	104.0
199	5/11	Art. Sim.	30.5	Cavity	87	85	86	88	87	86	84	85	87	87	89	91	90	92	92	93	92	90	88	85	87	85	81	82	83	79	77	74	73	72	72	69	69	67	102.5
206	5/12	Art. Sim.	30.5	Base	84	84	86	84	84	84	86	88	89	90	94	96	93	91	92	92	90	86	86	87	86	86	86	85	85	85	83	82	82	80	77	75	74	67	103.6
208	5/11	Art. Sim.	15.2	Base	84	88	89	84	84	83	86	85	88	91	88	91	90	92	92	91	88	89	88	87	86	87	86	85	85	84	83	81	79	79	77	74	71	65	102.4
208	5/11	Art. Sim.	15.2	Cavity	85	85	88	87	88	88	83	86	86	90	89	97	98	94	94	89	90	90	89	90	88	85	84	83	81	80	80	77	76	75	73	72	71	68	104.6
208	5/11	Art. Sim.	30.5	Cavity	83	86	91	92	88	89	89	86	88	88	94	102	102	93	96	96	92	93	90	91	88	84	84	84	81	79	79	77	76	74	73	72	71	69	107.5
208	5/11	Art. Sim.	30.5	Base	84	83	85	85	85	86	87	89	93	93	90	92	94	94	88	90	91	88	86	85	84	85	86	84	84	83	82	81	79	78	75	73	70	66	103.3
208	5/11	Art. Sim.	61	Cavity	76	76	77	78	77	75	80	83	86	88	93	101	103	94	86	86	90	89	84	87	85	81	81	79	78	77	76	76	74	70	62	69	70	60	106.5
208	5/11	Art. Sim.	61	Base	78	80	82	83	84	86	89	92	93	93	91	86	92	85	80	85	80	79	79	80	79	79	79	78	78	78	77	75	73	70	67	64	59	52	101.0
211	5/13	Art. Sim.	15.2	Base	89	89	88	85	84	81	80	83	87	90	95	93	93	87	86	86	85	85	84	85	85	85	86	85	86	86	84	83	83	82	81	78	75	72	102.3
211	5/13	Art. Sim.	15.2	Cavity	77	87	91	90	89	86	87	86	85	87	90	90	102	102	89	93	91	90	88	89	87	87	84	85	85	84	83	82	82	82	84	74	75	74	106.7
211	5/13	Art. Sim.	30.5	Base	48	67	71	73	78	77	72	76	81	89	89	88	84	79	77	75	77	77	79	78	79	80	80	80	80	79	78	76	76	74	74	68	64	59	96.0
211	5/13	Art. Sim.	30.5	Cavity	74	78	83	84	79	78	75	77	78	83	85	88	97	99	85	85	84	87	84	85	83	83	81	82	80	82	81	80	80	79	81	67	68	69	102.6
211	5/13	Art. Sim.	61	Base	63	61	69	72	73	69	75	82	83	84	83	81	72	74	73	75	74	76	78	79	79	79	79	78	77	77	76	74	73	72	71	67	64	62	92.7
211	5/13	Art. Sim.	61	Cavity	76	78	72	71	74	70	74	74	77	79	79	84	92	92	82	82	81	83	82	83	80	79	78	78	77	78	77	75	76	75	76	67	65	64	97.3
218	4/23	Art. Sim.	244	Base	59	68	72	76	78	80	81	83	86	89	87	81	71	60	60	58	54	59	62	62	64	65	65	64	61	60	55	52	44	41	34		35		93.7
218	4/27	Art. Sim.	61	Base	87		86	87	84	90	82	90	95	97	95	93	90	91	89	88	83	85	85	81	84	84	82	83	82	76	81	79	72	75	71	65	69	57	103.8
218	4/30	Art. Sim.	91.5	Base	40	52	56	58	81	84	87	88	91	92	92	90	84	76	82	83	73	77	72	72	72	73	73	75	74	73	71	68	69	66	63	61	58	56	99.1
218	5/26	Art. Sim.	15.2	Base	91	91	91	88	92	96	92	87	94	95	95	98	96	93	93	92	90	91	93	90	91	91	89	89	88	86	87	89	81	82	80	82	79	71	107.0
218	5/26	Art. Sim.	15.2	Cavity	96	98	99	98	96	94	94	95	96	95	94	99	102	98	98	96	92	96	93	89	92	92	90	89	89	84	87	87	83	82	75	69	76	72	110.1
218	5/26	Art. Sim.	30.5	Base	84	83	84	86	85	86	84	91	93	96	99	99	94	95	94	92	92	89	86	86	87	87	87	86	86	84	84	82	81	79	78	77	75	71	106.1
218	5/26	Art. Sim.	30.5	Cavity	89	90	92	89	91	92	88	90	86	90	92	97	106	104	94	98	93	97	92	94	89	88	86	86	84	83	79	77	75	74	72	71	70	67	110.4
231	5/11	Art. Sim.	15.2	Base	85	82	89	91	89	91	91	92	94	94	93	95	95	89	91	87	88	87	88	87	86	87	86	86	85	84	82	81	80	78	76	73	71	68	104.5
231	5/11	Art. Sim.	15.2	Cavity	85	89	90	90	89	92	90	90	89	90	92	93	95	98	103	105	98	97	94	96	93	91	90	91	89	87	85	83	81	79	79	78	78	76	109.9
231	5/11	Art. Sim.	30.5	Cavity	91	91	89	88	88	88	88	87	86	90	92	90	94	96	101	101	96	91	90	89	87	87	86	86	83	80	80	77	75	75	72	71	70	69	107.3
231	5/11	Art. Sim.	30.5	Base	67	82	84	85	86	86	86	92	89	95	98	98	96	91	94	90	89	86	89	86	85	87	86	86	86	85	83	82	81	79	78	76	74	71	105.4
231	5/11	Art. Sim.	61	Base	50	80	84	86	88	89	90	93	93	94	92	90	88	85	82	85	81	81	80	81	81	81	80	80	79	79	77	76	74	72	69	64	59	54	101.7
231	5/11	Art. Sim.	61	Cavity	61	80	83	85	86	85	85	87	85	91	88	89	90	96	100	100	92	89	89	87	82	83	85	83	82	77	74	76	76	70	69	73	73	71	105.4
236	5/11	Art. Sim.	15.2	Base	91	89	85	86	89	87	85	86	88	91	92	88	87	87	89	87	88	89	87	82	77	78	83	79	81	81	80	79	78	76	75	73	71	69	101.4
236	5/11	Art. Sim.	15.2	Cavity	93	92	87	90	92	93	92	93	93	92	90	92	94	98	92	92	93	90	91	88	83	88	86	83	82	82	81	76	77	77	75	74	73	72	105.8
236	5/11	Art. Sim.	30.5	Cavity	92	89	84	92	91	90	92	92	93	92	90	88	91	97	94	93	90	87	90	89	82	88	82	85	81	80	78	79	77	75	75	74	73	71	104.8
236	5/11	Art. Sim.	30.5	Base	91	90	89	87	87	87	85	85	87	89	91	89	92	90	90	90	90	87	83	83	81	82	83	80	82	80	81	80	79	78	75	73	71	69	102.0
236	5/11	Art. Sim.	61	Base	80	82	84	85	87	89	90	91	93	95	93	90	91	90	85	84	83	83	78	80	78	75	76	76	77	77	75	74	73	70	68	65	64	64	102.1
236	5/11	Art. Sim.	61	Cavity	80	83	83	82	81	80	79	84	89	89	89	90	96	101	97	90	92	92	90	85	86	81	81	82	77	80	77	76	75	74	72	71	70	68	105.4

Table D 3. Summary data for experimental .50 caliber blank fire on Fort Stewart, GA.

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
6	4/21	I-1	.50 cal.	61	90	2	1.7		Base	90.1	84.3
6	4/21	I-1	.50 cal.	61	90	2	1.7		Base	89.1	83.7
6	4/21	I-1	.50 cal.	61	90	2	1.7		Base	90.8	84.8
6	4/29	N-0	.50 cal.	91.5	90	2	10.8		Base	94.9	79.4
6	4/29	N-0	.50 cal.	91.5	90	2	10.8		Base	84.3	77.6
6	4/29	N-0	.50 cal.	91.5	90	2	10.8		Base	83.1	74.5
6	4/29	N-0	.50 cal.	91.5	90	2	10.8		Base	85.1	78.4
6	4/29	N-0	.50 cal.	91.5	90	2	10.8		Base	85.5	78.1
6	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	100.8	95.7
6	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	100.5	94.7
6	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	107.9	98.0
6	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	108.0	97.9
6	5/27	Post-fled.	.50 cal.	61	90	Post-fled.			Base	92.5	87.6
6	5/27	Post-fled.	.50 cal.	61	90	Post-fled.			Base	91.0	85.8
6	5/27	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	103.3	92.4
6	5/27	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	101.9	91.0
6	5/27	Post-fled.	.50 cal.	122	90	Post-fled.			Base	84.8	79.5
6	5/27	Post-fled.	.50 cal.	122	90	Post-fled.			Base	85.3	79.5
6	5/27	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	95.0	83.9
6	5/27	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	95.2	84.1
10	5/24	I-10	.50 cal.	30.5	90	2	13.6		Base	101.1	96.6
10	5/24	I-10	.50 cal.	30.5	90	2	13.6		Base	102.3	97.8
10	5/24	I-10	.50 cal.	30.5	90	2	13.6		Base	101.0	96.5
10	5/24	I-10	.50 cal.	30.5	90	2	13.6		Base	101.0	95.9
10	6/23	Post-fled.	.50 cal.	15.2	0	Post-fled.			Base	103.2	98.6
10	6/23	Post-fled.	.50 cal.	15.2	0	Post-fled.			Cavity	107.8	97.8
10	6/23	Post-fled.	.50 cal.	15.2	0	Post-fled.			Base	103.7	98.9
10	6/23	Post-fled.	.50 cal.	15.2	0	Post-fled.			Cavity	108.1	98.1
10	6/23	Post-fled.	.50 cal.	30.5	0	Post-fled.			Cavity	107.1	96.2
10	6/23	Post-fled.	.50 cal.	30.5	0	Post-fled.			Base	100.7	93.7
10	6/23	Post-fled.	.50 cal.	30.5	0	Post-fled.			Cavity	107.9	96.7
10	6/23	Post-fled.	.50 cal.	30.5	0	Post-fled.			Base	101.4	94.1
10	6/23	Post-fled.	.50 cal.	45.7	0	Post-fled.			Base	96.8	88.7
10	6/23	Post-fled.	.50 cal.	45.7	0	Post-fled.			Cavity	104.2	92.4
10	6/23	Post-fled.	.50 cal.	45.7	0	Post-fled.			Cavity	95.5	84.0
10	6/23	Post-fled.	.50 cal.	45.7	0	Post-fled.			Cavity	103.1	91.3
10	6/23	Post-fled.	.50 cal.	45.7	0	Post-fled.			Base	89.6	81.2

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
10	6/23	Post-fled.	.50 cal.	45.7	0	Post-fled.			Base	95.4	87.0
10	6/23	Post-fled.	.50 cal.	61	0	Post-fled.			Cavity	102.3	90.6
10	6/23	Post-fled.	.50 cal.	61	0	Post-fled.			Cavity	108.6	96.9
10	6/23	Post-fled.	.50 cal.	61	0	Post-fled.			Base	92.8	84.5
10	6/23	Post-fled.	.50 cal.	61	0	Post-fled.			Base	99.3	91.2
10	6/23	Post-fled.	.50 cal.	122	0	Post-fled.			Base	84.7	76.9
10	6/23	Post-fled.	.50 cal.	122	0	Post-fled.			Base	81.7	73.9
10	6/23	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	93.7	81.4
10	6/23	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	91.1	83.2
12	4/28	I-1	.50 cal.	122	90	0			Base	84.9	80.1
12	4/28	I-1	.50 cal.	122	90	0			Base	84.1	79.5
12	4/28	I-1	.50 cal.	122	90	0			Base	84.6	79.5
12	4/28	I-1	.50 cal.	122	90	0			Base	83.8	78.2
12	6/11	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	107.3	104.3
12	6/11	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	114.4	105.3
12	6/11	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	100.5	96.2
12	6/11	Post-fled.	.50 cal.	61	90	Post-fled.			Base	97.8	92.7
12	6/11	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	112.1	105.1
12	6/11	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	106.8	96.8
12	6/11	Post-fled.	.50 cal.	122	90	Post-fled.			Base	87.2	80.4
23	4/28	I-3	.50 cal.	122	90	0			Base	86.5	79.6
23	4/28	I-3	.50 cal.	122	90	0			Base	87.4	80.7
23	4/28	I-3	.50 cal.	122	90	0			Base	87.4	80.2
23	4/28	I-3	.50 cal.	122	90	0			Base	88.4	81.6
23	5/3	I-8	.50 cal.	30.5	90	0			Base	90.2	82.7
23	5/3	I-8	.50 cal.	30.5	90	0			Base	93.0	84.8
23	5/3	I-8	.50 cal.	30.5	90	0			Base	92.9	83.9
23	5/3	I-8	.50 cal.	30.5	90	0			Base	95.3	86.6
23	5/3	I-8	.50 cal.	30.5	90	0			Base	96.3	87.6
23	5/3	I-8	.50 cal.	30.5	90	0			Base	97.0	87.9
23	5/3	I-8	.50 cal.	30.5	90	0			Base	99.4	90.7
23	5/3	I-8	.50 cal.	30.5	90	0			Base	98.5	89.6
23	5/6	N-0	.50 cal.	15.2	90	2	5.6		Base	96.8	92.5
23	5/6	N-0	.50 cal.	15.2	90	2	5.6		Base	108.3	102.6
23	5/6	N-0	.50 cal.	15.2	90	2	5.6		Base	101.8	96.1
23	5/6	N-0	.50 cal.	15.2	90	2	5.6		Base	108.0	102.4
23	6/14	Post-fled.	.50 cal.	15.2	0	Post-fled.			Base	106.3	102.8
23	6/14	Post-fled.	.50 cal.	15.2	0	Post-fled.			Base	107.3	104.0
23	6/14	Post-fled.	.50 cal.	15.2	0	Post-fled.			Base	108.2	104.8

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
23	6/14	Post-fled.	.50 cal.	15.2	0	Post-fled.			Cavity	117.2	107.0
23	6/14	Post-fled.	.50 cal.	15.2	0	Post-fled.			Cavity	118.1	107.9
23	6/14	Post-fled.	.50 cal.	15.2	0	Post-fled.			Cavity	118.9	108.7
23	6/14	Post-fled.	.50 cal.	30.5	0	Post-fled.			Cavity	116.8	105.4
23	6/14	Post-fled.	.50 cal.	30.5	0	Post-fled.			Cavity	119.4	108.0
23	6/14	Post-fled.	.50 cal.	30.5	0	Post-fled.			Base	102.4	95.7
23	6/14	Post-fled.	.50 cal.	30.5	0	Post-fled.			Base	101.3	94.0
23	6/14	Post-fled.	.50 cal.	30.5	0	Post-fled.			Base	103.2	95.7
23	6/14	Post-fled.	.50 cal.	61	0	Post-fled.			Base	94.8	86.6
23	6/14	Post-fled.	.50 cal.	61	0	Post-fled.			Base	95.5	87.7
23	6/14	Post-fled.	.50 cal.	61	0	Post-fled.			Base	93.8	86.0
23	6/14	Post-fled.	.50 cal.	61	0	Post-fled.			Cavity	116.8	104.3
23	6/14	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	96.0	83.8
23	6/14	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	99.5	86.9
23	6/14	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	100.9	88.2
23	6/14	Post-fled.	.50 cal.	122	0	Post-fled.			Base	81.6	75.3
23	6/14	Post-fled.	.50 cal.	122	0	Post-fled.			Base	84.0	77.3
23	6/14	Post-fled.	.50 cal.	122	0	Post-fled.			Base	85.0	78.4
30	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Base	91.0	85.9
30	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Base	91.7	86.5
30	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	104.1	95.1
30	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	105.0	96.7
30	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	112.5	104.3
30	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	104.6	102.2
30	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	95.1	90.5
30	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	98.1	93.6
30	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	104.5	96.4
30	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	107.7	99.8
36	5/19	N-1	.50 cal.	61	90	2	2.1		Base	89.6	82.9
36	5/19	N-1	.50 cal.	61	90	2	2.1		Base	90.9	84.2
36	5/19	N-1	.50 cal.	61	90	2	2.1		Base	90.8	83.6
36	5/19	N-1	.50 cal.	61	90	2	2.1		Base	90.8	84.1
36	5/19	N-1	.50 cal.	61	90	2	2.1		Base	91.4	84.8
36	5/21	I-8	.50 cal.	91.5	90	1			Base	89.4	84.6
36	5/21	I-8	.50 cal.	91.5	90	1			Base	89.5	84.8
36	5/21	I-8	.50 cal.	91.5	90	1			Base	90.1	84.9
36	5/21	I-8	.50 cal.	91.5	90	1			Base	89.4	84.4
36	5/21	I-8	.50 cal.	91.5	90	1			Base	92.2	86.9
36	5/21	I-8	.50 cal.	91.5	90	1			Base	91.8	86.7

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
36	6/15	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.8	100.3
36	6/15	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	113.3	107.0
36	6/15	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	110.9	103.4
36	6/15	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	101.1	95.2
36	6/15	Post-fled.	.50 cal.	61	90	Post-fled.			Base	91.0	83.8
36	6/15	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	101.0	94.6
36	6/15	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	95.3	89.0
36	6/15	Post-fled.	.50 cal.	122	90	Post-fled.			Base	85.1	79.0
36	6/15	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	107.9	104.4
36	6/15	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.9	103.3
36	6/15	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	100.0	95.7
36	6/15	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	102.9	100.1
36	6/15	Post-fled.	.50 cal.	61	90	Post-fled.			Base	94.4	92.3
36	6/15	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	98.7	96.7
36	6/15	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	92.5	89.3
36	6/15	Post-fled.	.50 cal.	122	90	Post-fled.			Base	87.9	81.5
44	5/27	Post-fled.	.50 cal.	61	90	Post-fled.			Base	95.4	88.7
44	5/27	Post-fled.	.50 cal.	61	90	Post-fled.			Base	93.7	86.5
44	5/27	Post-fled.	.50 cal.	61	90	Post-fled.			Base	93.3	86.3
44	5/27	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	110.2	96.5
44	5/27	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	108.6	94.7
44	5/27	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	108.5	94.4
44	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	102.1	96.0
44	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	101.3	95.0
44	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	98.7	92.5
44	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	115.7	102.9
44	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	114.9	102.2
44	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	112.9	99.9
44	5/27	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	106.2	101.8
44	5/27	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.8	101.1
44	5/27	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	104.7	99.8
44	5/27	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	116.4	104.3
44	5/27	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	115.7	103.9
44	5/27	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	114.8	103.0
51	4/27	N-0	.50 cal.	122	90	1			Base	85.2	80.8
51	4/27	N-0	.50 cal.	122	90	1			Base	82.4	77.4
51	4/27	N-0	.50 cal.	122	90	1			Base	75.7	70.6
51	4/27	N-0	.50 cal.	122	90	1			Base	79.9	74.9
51	4/27	N-0	.50 cal.	122	90	1			Base	82.5	78.6

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
51	4/27	N-0	.50 cal.	122	90	1			Base	82.4	78.0
51	4/29	N-2	.50 cal.	61	90	0			Base	93.4	85.8
51	4/29	N-2	.50 cal.	61	90	0			Base	93.7	86.1
51	4/29	N-2	.50 cal.	61	90	0			Base	93.5	86.0
51	4/29	N-2	.50 cal.	61	90	0			Base	93.3	86.0
51	4/29	N-2	.50 cal.	61	90	0			Base	93.5	86.0
51	4/29	N-2	.50 cal.	61	90	0			Base	93.0	85.8
51	4/29	N-2	.50 cal.	61	90	0			Base	93.7	86.1
51	4/29	N-2	.50 cal.	61	90	0			Base	93.6	86.3
51	5/3	N-3	.50 cal.	30.5	90	2	1.9		Base	94.4	88.2
51	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.9	102.2
51	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.8	102.2
51	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.4	102.1
51	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	117.6	108.3
51	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	117.5	108.3
51	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	116.8	107.8
51	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	114.7	106.3
51	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	114.4	106.0
51	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	114.5	105.7
51	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	102.3	98.7
51	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	101.7	95.8
51	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	101.6	95.5
52	5/13	Inactive	.50 cal.	15.2	90	Inactive			Cavity	110.5	101.5
52	5/13	Inactive	.50 cal.	15.2	90	Inactive			Base	105.3	102.1
52	5/13	Inactive	.50 cal.	30.5	90	Inactive			Cavity	107.4	97.6
52	5/13	Inactive	.50 cal.	61	90	Inactive			Cavity	99.6	91.1
52	5/13	Inactive	.50 cal.	61	90	Inactive			Base	93.7	88.6
52	5/13	Inactive	.50 cal.	15.2	90	Inactive			Base	100.4	97.9
52	5/13	Inactive	.50 cal.	15.2	90	Inactive			Cavity	105.8	101.4
52	5/13	Inactive	.50 cal.	30.5	90	Inactive			Base	92.6	90.0
52	5/13	Inactive	.50 cal.	30.5	90	Inactive			Cavity	99.5	94.8
52	5/13	Inactive	.50 cal.	61	90	Inactive			Cavity	97.9	92.9
52	5/13	Inactive	.50 cal.	61	90	Inactive			Base	92.9	88.3
53	5/4	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	103.9	101.6
53	5/4	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	113.0	105.3
53	5/4	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	113.7	105.4
53	5/4	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	99.5	94.7
53	5/4	Post-fled.	.50 cal.	61	90	Post-fled.			Base	90.4	85.8
53	5/4	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	110.1	101.1

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
53	5/4	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	112.0	103.6
53	5/4	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	103.5	100.5
53	5/4	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	98.7	95.6
53	5/4	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	110.2	101.1
53	5/4	Post-fled.	.50 cal.	61	90	Post-fled.			Base	108.7	98.3
53	5/4	Post-fled.	.50 cal.	61	90	Post-fled.			Base	91.2	84.5
53	5/5	I-1	.50 cal.	30.5	90	0			Base	106.0	99.2
53	5/5	I-1	.50 cal.	30.5	90	0			Base	100.0	93.0
53	5/10	I-6	.50 cal.	15.2	90	0			Base	106.7	102.2
53	5/10	I-6	.50 cal.	15.2	90	0			Base	107.2	102.5
53	5/10	I-6	.50 cal.	15.2	90	0			Base	107.4	102.2
53	5/10	I-6	.50 cal.	15.2	90	0			Base	107.2	102.5
53	5/12	I-8	.50 cal.	30.5	90	0		Replication of 1st 30.5 m trial	Base	98.3	93.4
53	5/12	I-8	.50 cal.	30.5	90	0		Replication of 1st 30.5 m trial	Base	101.1	94.7
53	5/12	I-8	.50 cal.	30.5	90	0		Replication of 1st 30.5 m trial	Base	101.6	94.7
53	5/12	I-8	.50 cal.	30.5	90	0		Replication of 1st 30.5 m trial	Base	103.1	96.5
53	5/12	I-8	.50 cal.	30.5	90	0		Replication of 1st 30.5 m trial	Base	103.7	97.4
53	5/12	I-8	.50 cal.	30.5	90	0		Replication of 1st 30.5 m trial	Base	105.3	98.7
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	86.8	81.7
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	85.2	79.8
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	85.8	80.5
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	86.0	80.2
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	86.4	81.5
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	87.4	83.3
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	91.4	86.7
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	91.3	86.8
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	90.7	85.7
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	91.1	86.4
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	91.3	87.3
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	91.3	86.5
57	4/21	I-6	.50 cal.	61	90	2	2.8		Base	91.4	87.0
57	4/26	N-0	.50 cal.	122	90	0			Base	81.9	75.3
57	4/26	N-0	.50 cal.	122	90	0			Base	79.5	72.1
57	4/26	N-0	.50 cal.	122	90	0			Base	81.7	74.7
57	4/26	N-0	.50 cal.	122	90	0			Base	82.0	75.4
57	4/26	N-0	.50 cal.	122	90	0			Base	81.8	74.7
57	4/26	N-0	.50 cal.	122	90	0			Base	82.4	75.8

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
57	4/26	N-0	.50 cal.	122	90	0			Base	81.9	75.0
57	4/30	N-4	.50 cal.	91.5	90	2	10.9		Base	85.9	81.2
57	4/30	N-4	.50 cal.	91.5	90	2	10.9		Base	84.3	78.3
57	6/2	Post-fled.	.50 cal.	122	90	Post-fled.			Base	87.3	81.3
57	6/2	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	98.1	86.6
57	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Cavity	97.8	86.7
57	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	87.0	80.8
57	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Base	90.5	84.8
57	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Base	93.4	87.5
57	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	100.7	90.1
57	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	104.1	92.8
57	6/2	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	114.0	101.7
57	6/2	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	105.4	100.8
57	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.0	101.6
57	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.7	102.1
57	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	111.1	99.2
57	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	112.8	101.5
57	6/2	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	94.4	84.0
57	6/2	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	95.1	84.5
57	6/2	Post-fled.	.50 cal.	122	90	Post-fled.			Base	84.9	79.5
57	6/2	Post-fled.	.50 cal.	122	90	Post-fled.			Base	84.8	79.3
57	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	62.7	48.4
57	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	87.2	81.3
57	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	87.2	81.4
57	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Cavity	98.6	87.9
57	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Cavity	98.5	88.3
57	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	103.7	93.6
57	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	104.5	94.3
57	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Base	93.5	87.8
57	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Base	94.3	88.9
57	6/2	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	100.9	96.8
57	6/2	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	100.7	96.3
57	6/2	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	108.6	98.9
57	6/2	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	108.7	99.0
57	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	102.0	92.6
57	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	109.1	99.7
57	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	110.1	100.7
57	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	95.5	92.3
57	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	102.9	100.0

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
57	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	103.7	100.1
61	5/17	I-3	.50 cal.	30.5	90	0			Base	96.9	94.9
61	5/17	I-3	.50 cal.	30.5	90	0			Base	94.3	91.8
61	5/17	I-3	.50 cal.	30.5	90	0			Base	98.4	95.3
61	5/17	I-3	.50 cal.	30.5	90	0			Base	97.5	94.0
61	5/17	I-3	.50 cal.	30.5	90	0			Base	97.3	93.7
61	5/17	I-3	.50 cal.	30.5	90	0			Base	98.7	95.4
61	5/17	I-3	.50 cal.	30.5	90	0			Base	97.9	94.7
61	5/17	I-3	.50 cal.	30.5	90	0			Base	99.2	96.2
61	5/17	I-3	.50 cal.	30.5	90	0			Base	97.6	93.7
61	5/17	I-3	.50 cal.	30.5	90	0			Base	93.5	90.1
61	5/21	I-7	.50 cal.	15.2	90	0			Base	107.3	103.8
61	5/21	I-7	.50 cal.	15.2	90	0			Base	107.1	103.3
61	5/21	I-7	.50 cal.	15.2	90	0			Base	105.9	102.0
61	5/21	I-7	.50 cal.	15.2	90	0			Base	105.2	101.6
61	6/15	I-9	.50 cal.	30.5	0	0		Data replication. Not used in response analysis	Base	106.5	102.2
61	6/15	I-9	.50 cal.	30.5	0	0		Data replication. Not used in response analysis	Base	103.3	98.7
88	5/26	I-4	.50 cal.	30.5	90	2	14.6		Base	100.0	92.7
88	5/26	I-4	.50 cal.	30.5	90	2	14.6		Base	99.7	92.3
88	5/26	I-4	.50 cal.	30.5	90	2	14.6		Base	100.7	92.8
88	5/26	I-4	.50 cal.	30.5	90	2	14.6		Base	99.8	92.1
88	5/26	I-4	.50 cal.	30.5	90	2	14.6		Base	101.2	94.0
120	5/13	I-1	.50 cal.	30.5	90	2	5.9		Base	104.1	98.5
120	5/13	I-1	.50 cal.	30.5	90	2	5.9		Base	105.1	99.9
120	5/13	I-1	.50 cal.	30.5	90	2	5.9		Base	103.2	98.0
125	5/13	Inactive	.50 cal.	15.2	90	Inactive			Cavity	102.6	96.1
125	5/13	Inactive	.50 cal.	15.2	90	Inactive			Cavity	104.0	97.6
125	5/13	Inactive	.50 cal.	15.2	90	Inactive			Base	95.1	91.2
125	5/13	Inactive	.50 cal.	15.2	90	Inactive			Base	96.7	92.1
125	5/13	Inactive	.50 cal.	30.5	90	Inactive			Cavity	101.3	96.4
125	5/13	Inactive	.50 cal.	30.5	90	Inactive			Base	97.2	94.5
125	5/13	Inactive	.50 cal.	61	90	Inactive			Cavity	96.9	91.2
125	5/13	Inactive	.50 cal.	61	90	Inactive			Base	93.8	90.4
125	5/13	Inactive	.50 cal.	15.2	90	Inactive			Cavity	108.9	102.8
125	5/13	Inactive	.50 cal.	15.2	90	Inactive			Base	100.4	98.2
125	5/13	Inactive	.50 cal.	30.5	90	Inactive			Base	93.1	90.2
125	5/13	Inactive	.50 cal.	30.5	90	Inactive			Cavity	92.8	90.2
125	5/13	Inactive	.50 cal.	61	90	Inactive			Cavity	96.4	91.3

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
125	5/13	Inactive	.50 cal.	61	90	Inactive			Base	90.5	87.7
127	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	102.5	96.7
127	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	104.5	97.8
127	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Base	88.3	81.7
127	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Base	90.9	84.7
127	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	88.9	82.6
127	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	90.3	84.8
127	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	102.4	91.8
127	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	103.1	92.6
127	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	114.0	104.5
127	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	113.8	104.6
127	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	103.3	101.4
127	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	103.1	101.0
129	5/17	N-0	.50 cal.	30.5	90	2	3.0		Base	108.2	103.0
129	5/19	N-2	.50 cal.	61	90	2	2.6		Base	93.9	86.7
129	5/19	N-2	.50 cal.	61	90	2	2.6		Base	95.3	88.3
129	5/19	N-2	.50 cal.	61	90	2	2.6		Base	95.2	87.8
129	5/19	N-2	.50 cal.	61	90	2	2.6		Base	98.8	91.7
129	5/24	N-7	.50 cal.	91.5	90	2	1.8		Base	95.0	87.4
133	4/21	I-1	.50 cal.	61	90	0			Base	92.8	85.8
133	4/21	I-1	.50 cal.	61	90	0			Base	93.3	85.9
133	4/21	I-1	.50 cal.	61	90	0			Base	93.7	86.0
133	4/21	I-1	.50 cal.	61	90	0			Base	94.3	86.8
133	4/26	I-5	.50 cal.	122	90	1			Base	84.8	79.2
133	4/26	I-5	.50 cal.	122	90	1			Base	85.1	79.6
133	4/26	I-5	.50 cal.	122	90	1			Base	84.6	79.0
133	4/26	I-5	.50 cal.	122	90	1			Base	84.4	79.2
133	4/26	I-5	.50 cal.	122	90	1			Base	77.5	71.8
133	4/29	I-8	.50 cal.	91.5	90	0			Base	88.0	81.9
133	4/29	I-8	.50 cal.	91.5	90	0			Base	87.0	80.7
133	4/29	I-8	.50 cal.	91.5	90	0			Base	86.2	79.8
133	4/29	I-8	.50 cal.	91.5	90	0			Base	87.0	80.6
133	4/29	I-8	.50 cal.	91.5	90	0			Base	86.0	78.9
133	6/2	Post-fled.	.50 cal.	15.2	0	Post-fled.			Base	105.3	102.7
133	6/2	Post-fled.	.50 cal.	15.2	0	Post-fled.			Cavity	114.2	103.5
133	6/2	Post-fled.	.50 cal.	30.5	0	Post-fled.			Cavity	113.7	102.5
133	6/2	Post-fled.	.50 cal.	30.5	0	Post-fled.			Base	102.4	98.3
133	6/2	Post-fled.	.50 cal.	61	0	Post-fled.			Base	93.8	87.5
133	6/2	Post-fled.	.50 cal.	61	0	Post-fled.			Cavity	110.3	100.3

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
133	6/2	Post-fled.	.50 cal.	91.5	0	Post-fled.			Cavity	102.9	94.7
133	6/2	Post-fled.	.50 cal.	91.5	0	Post-fled.			Base	89.3	84.7
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Base	78.5	71.7
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Base	74.1	70.4
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Base	77.0	71.9
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Base	76.7	71.4
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Base	76.0	71.4
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Base	76.2	71.5
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Base	81.6	75.9
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	92.5	82.0
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	91.2	81.8
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	91.2	82.1
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	90.8	81.7
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	91.1	82.9
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	96.9	87.1
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	101.9	94.4
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	101.1	93.6
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Base	87.5	82.1
133	6/2	Post-fled.	.50 cal.	122	0	Post-fled.			Base	86.7	80.8
133	6/2	Post-fled.	.50 cal.	91.5	0	Post-fled.			Base	92.5	85.9
133	6/2	Post-fled.	.50 cal.	91.5	0	Post-fled.			Base	93.4	86.7
133	6/2	Post-fled.	.50 cal.	91.5	0	Post-fled.			Cavity	110.9	101.7
133	6/2	Post-fled.	.50 cal.	91.5	0	Post-fled.			Cavity	112.2	103.5
139	5/4	I-6	.50 cal.	61	90	2			Base	93.0	85.9
139	5/4	I-6	.50 cal.	61	90	2			Base	93.0	86.0
139	5/4	I-6	.50 cal.	61	90	2			Base	92.9	85.9
139	5/4	I-6	.50 cal.	61	90	2			Base	93.7	86.7
139	5/4	I-6	.50 cal.	61	90	2			Base	92.9	85.8
139	5/4	I-6	.50 cal.	61	90	2			Base	93.0	86.2
139	5/4	I-6	.50 cal.	61	90	2			Base	92.9	85.9
139	5/4	I-6	.50 cal.	61	90	2			Base	93.6	86.4
139	5/9	N-0	.50 cal.	91.5	90	2	5.2		Base	89.0	82.6
139	5/9	N-0	.50 cal.	91.5	90	2	5.2		Base	89.7	82.8
139	5/9	N-0	.50 cal.	91.5	90	2	5.2		Base	90.4	83.5
139	5/9	N-0	.50 cal.	91.5	90	2	5.2		Base	91.0	84.2
139	6/14	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	112.3	104.2
139	6/14	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	106.2	103.7
139	6/14	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	103.4	100.4
139	6/14	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	112.5	103.9

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
139	6/14	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	106.0	96.1
139	6/14	Post-fled.	.50 cal.	61	90	Post-fled.			Base	92.7	88.0
139	6/14	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	86.3	81.6
139	6/14	Post-fled.	.50 cal.	91.5	90	Post-fled.			Cavity	99.7	90.1
139	6/14	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	98.5	87.6
139	6/14	Post-fled.	.50 cal.	122	90	Post-fled.			Base	83.6	78.5
139	6/14	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	107.2	104.7
139	6/14	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	118.2	111.9
139	6/14	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	116.0	110.3
139	6/14	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	103.4	100.4
139	6/14	Post-fled.	.50 cal.	61	90	Post-fled.			Base	94.0	89.2
139	6/14	Post-fled.	.50 cal.	61	90	Post-fled.			Base	109.3	102.8
139	6/14	Post-fled.	.50 cal.	91.5	90	Post-fled.			Cavity	104.2	97.7
139	6/14	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	87.1	83.1
139	6/14	Post-fled.	.50 cal.	122	90	Post-fled.			Base	85.9	78.9
139	6/14	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	104.2	97.0
139	6/17	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	103.7	100.7
139	6/17	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	112.8	105.0
139	6/17	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	108.9	98.6
139	6/17	Post-fled.	.50 cal.	61	90	Post-fled.			Base	97.6	92.6
139	6/17	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	89.6	84.7
139	6/17	Post-fled.	.50 cal.	91.5	90	Post-fled.			Cavity	101.2	94.3
139	6/17	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	99.5	89.8
139	6/17	Post-fled.	.50 cal.	122	90	Post-fled.			Base	84.9	78.8
143	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	113.9	102.3
143	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	113.8	102.1
143	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	114.9	103.3
143	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	98.9	93.9
143	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	99.0	93.9
143	5/27	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	100.2	94.0
143	5/27	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	114.7	104.2
143	5/27	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	110.8	100.1
143	5/27	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	113.7	103.1
143	5/27	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	104.0	101.4
143	5/27	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	99.8	96.8
143	5/27	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	103.0	100.5
148	4/23	I-3	.50 cal.	122	90	1			Base	81.5	76.3
148	4/23	I-3	.50 cal.	122	90	1			Base	88.3	84.0
148	4/23	I-3	.50 cal.	122	90	1			Base	85.1	79.5

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
148	4/23	I-3	.50 cal.	122	90	1			Base	88.8	83.8
148	4/23	I-3	.50 cal.	122	90	1			Base	84.5	78.9
148	4/27	I-7	.50 cal.	61	90	1			Base	90.6	87.2
148	4/27	I-7	.50 cal.	61	90	1			Base	90.6	87.1
148	4/27	I-7	.50 cal.	61	90	1			Base	90.4	86.7
148	4/27	I-7	.50 cal.	61	90	1			Base	85.7	81.9
148	5/3	N-2	.50 cal.	30.5	90	2	3.2		Base	103.0	94.6
151	5/10	N-1	.50 cal.	15.2	90	2	4.4		Base	105.2	101.6
151	5/10	N-1	.50 cal.	15.2	90	2	4.4		Base	105.9	102.3
151	5/10	N-1	.50 cal.	15.2	90	2	4.4		Base	106.9	103.1
151	5/10	N-1	.50 cal.	15.2	90	2	4.4		Base	106.8	102.9
151	6/14	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	106.5	102.1
151	6/14	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	115.1	106.3
151	6/14	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	111.4	104.6
151	6/14	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	100.4	97.2
151	6/14	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	109.0	100.7
151	6/14	Post-fled.	.50 cal.	61	90	Post-fled.			Base	85.7	78.5
162	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Base	94.2	87.1
162	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Base	93.9	86.7
162	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	111.9	103.7
162	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	112.7	104.7
162	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	113.9	106.3
162	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	114.6	106.5
162	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	100.1	96.0
162	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	109.4	104.6
162	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	117.6	109.8
162	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	118.4	110.5
163	5/17	I-6	.50 cal.	30.5	90	2	1.2		Base	96.1	92.7
163	5/17	I-6	.50 cal.	30.5	90	2	1.2		Base	97.8	93.9
163	5/17	I-6	.50 cal.	30.5	90	2	1.2		Base	97.4	93.5
163	5/17	I-6	.50 cal.	30.5	90	2	1.2		Base	97.5	93.8
163	5/17	I-6	.50 cal.	30.5	90	2	1.2		Base	98.4	95.0
163	5/17	I-6	.50 cal.	30.5	90	2	1.2		Base	99.5	95.4
163	6/21	Post-fled.	.50 cal.	15.2	0	Post-fled.			Base	109.1	106.1
163	6/21	Post-fled.	.50 cal.	15.2	0	Post-fled.			Base	109.4	106.4
163	6/21	Post-fled.	.50 cal.	15.2	0	Post-fled.			Cavity	116.3	106.8
163	6/21	Post-fled.	.50 cal.	15.2	0	Post-fled.			Cavity	117.0	107.3
163	6/21	Post-fled.	.50 cal.	30.5	0	Post-fled.			Cavity	110.9	103.8
163	6/21	Post-fled.	.50 cal.	30.5	0	Post-fled.			Cavity	113.4	105.5

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
163	6/21	Post-fled.	.50 cal.	30.5	0	Post-fled.			Base	101.0	98.3
163	6/21	Post-fled.	.50 cal.	30.5	0	Post-fled.			Base	101.7	98.8
163	6/21	Post-fled.	.50 cal.	61	0	Post-fled.			Base	98.7	94.9
163	6/21	Post-fled.	.50 cal.	61	0	Post-fled.			Cavity	111.8	102.3
163	6/21	Post-fled.	.50 cal.	91.5	0	Post-fled.			Cavity	107.6	97.3
163	6/21	Post-fled.	.50 cal.	91.5	0	Post-fled.			Cavity	105.9	95.3
163	6/21	Post-fled.	.50 cal.	91.5	0	Post-fled.			Base	90.8	84.7
163	6/21	Post-fled.	.50 cal.	91.5	0	Post-fled.			Base	89.3	83.4
163	6/21	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	106.0	97.8
163	6/21	Post-fled.	.50 cal.	122	0	Post-fled.			Base	88.4	84.6
163	6/21	Post-fled.	.50 cal.	122	0	Post-fled.			Base	88.3	84.9
163	6/21	Post-fled.	.50 cal.	15.2	0	Post-fled.			Cavity	109.7	103.2
163	6/21	Post-fled.	.50 cal.	15.2	0	Post-fled.			Cavity	109.4	102.7
163	6/21	Post-fled.	.50 cal.	15.2	0	Post-fled.			Base	103.0	100.3
163	6/21	Post-fled.	.50 cal.	15.2	0	Post-fled.			Base	103.6	100.7
163	6/21	Post-fled.	.50 cal.	30.5	0	Post-fled.			Base	96.6	90.1
163	6/21	Post-fled.	.50 cal.	30.5	0	Post-fled.			Base	96.5	89.7
163	6/21	Post-fled.	.50 cal.	30.5	0	Post-fled.			Cavity	107.2	100.2
163	6/21	Post-fled.	.50 cal.	30.5	0	Post-fled.			Cavity	107.2	100.4
163	6/21	Post-fled.	.50 cal.	61	0	Post-fled.			Cavity	103.9	97.4
163	6/21	Post-fled.	.50 cal.	61	0	Post-fled.			Base	90.7	85.8
163	6/21	Post-fled.	.50 cal.	91.5	0	Post-fled.			Cavity	103.4	96.9
163	6/21	Post-fled.	.50 cal.	91.5	0	Post-fled.			Base	89.9	85.1
163	6/21	Post-fled.	.50 cal.	122	0	Post-fled.			Base	87.1	81.9
163	6/21	Post-fled.	.50 cal.	122	0	Post-fled.			Base	87.1	81.9
163	6/21	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	99.1	92.6
163	6/21	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	99.5	93.1
176	4/28	I-3	.50 cal.	122	90	2	11.7		Base	89.4	82.7
176	4/28	I-3	.50 cal.	122	90	2	11.7		Base	88.2	81.8
176	4/28	I-3	.50 cal.	122	90	2	11.7		Base	87.0	80.2
176	4/28	I-3	.50 cal.	122	90	2	11.7		Base	86.4	79.5
176	5/26	N-7	.50 cal.	15.2	90	2	7.1		Base	88.0	81.5
176	5/26	N-7	.50 cal.	15.2	90	2	7.1		Base	88.8	82.2
176	5/26	N-7	.50 cal.	15.2	90	2	7.1		Base	85.3	78.8
176	5/27	N-8	.50 cal.	61	90	2	5.5		Base	91.1	88.0
176	5/27	N-8	.50 cal.	61	90	2	5.5		Base	92.2	89.3
176	5/27	N-8	.50 cal.	61	90	2	5.5		Base	91.6	87.1
176	5/27	N-8	.50 cal.	61	90	2	5.5		Base	93.1	88.4
194	4/19	I-5	.50 cal.	61	90	0			Base	87.4	82.4

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
194	4/19	I-5	.50 cal.	61	90	0			Base	96.5	91.0
194	4/19	I-5	.50 cal.	61	90	0			Base	95.5	88.9
194	4/19	I-5	.50 cal.	61	90	0			Base	94.7	88.9
194	4/19	I-5	.50 cal.	61	90	0			Base	90.7	83.9
194	4/19	I-5	.50 cal.	61	90	0			Base	92.9	85.5
194	4/19	I-5	.50 cal.	61	90	0			Base	98.1	91.4
194	4/19	I-5	.50 cal.	61	90	0			Base	94.0	86.5
194	4/28	N-3	.50 cal.	30.5	90	0			Base	99.7	94.3
194	4/28	N-3	.50 cal.	30.5	90	0			Base	100.9	95.1
194	4/28	N-3	.50 cal.	30.5	90	0			Base	101.1	94.8
194	4/28	N-3	.50 cal.	30.5	90	0			Base	101.9	95.6
194	4/28	N-3	.50 cal.	30.5	90	0			Base	93.6	87.0
194	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.8	101.5
194	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.7	101.1
194	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	108.0	103.2
194	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	116.6	104.5
194	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	116.5	104.3
194	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	118.6	106.3
194	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	116.7	102.8
194	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	116.7	102.6
194	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	116.9	102.7
194	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	104.1	97.4
194	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	104.0	97.1
194	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	103.8	96.4
199	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	106.7	102.7
199	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	111.1	106.2
199	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	114.8	109.8
199	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	111.8	103.9
199	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	115.3	107.8
199	5/11	Inactive	.50 cal.	30.5	90	Inactive			Base	95.2	89.5
199	5/11	Inactive	.50 cal.	30.5	90	Inactive			Base	100.6	95.1
199	5/11	Inactive	.50 cal.	30.5	90	Inactive			Cavity	105.5	97.3
199	5/11	Inactive	.50 cal.	30.5	90	Inactive			Cavity	110.8	102.7
199	5/11	Inactive	.50 cal.	61	90	Inactive			Base	103.0	95.3
199	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	116.9	108.0
201	6/17	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	107.1	102.6
201	6/17	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	106.1	95.7
201	6/17	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	105.0	93.7
201	6/17	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	102.8	97.2

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
201	6/17	Post-fled.	.50 cal.	61	90	Post-fled.			Base	96.8	90.1
201	6/17	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	99.7	89.5
201	6/17	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	93.7	85.2
201	6/17	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	91.6	85.2
201	6/17	Post-fled.	.50 cal.	122	90	Post-fled.			Base	90.4	83.6
201	6/17	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	92.7	85.7
201	6/17	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.8	102.4
201	6/17	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	113.3	104.8
201	6/17	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	111.2	101.5
201	6/17	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	99.3	94.1
201	6/17	Post-fled.	.50 cal.	61	90	Post-fled.			Base	93.4	87.6
201	6/17	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	107.3	97.2
201	6/17	Post-fled.	.50 cal.	91.5	90	Post-fled.			Cavity	105.6	95.1
201	6/17	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	89.7	82.4
201	6/17	Post-fled.	.50 cal.	122	90	Post-fled.			Base	86.1	79.2
201	6/17	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	100.2	90.5
205	4/22	I-1	.50 cal.	61	90	2	5.0		Base	85.7	78.9
205	4/26	I-5	.50 cal.	122	90	1			Base	85.3	76.4
205	4/26	I-5	.50 cal.	122	90	1			Base	85.7	77.3
205	4/26	I-5	.50 cal.	122	90	1			Base	84.5	75.5
205	4/26	I-5	.50 cal.	122	90	1			Base	85.3	76.9
205	4/26	I-5	.50 cal.	122	90	1			Base	85.2	76.5
205	4/26	I-5	.50 cal.	122	90	1			Base	82.5	74.2
205	4/29	I-8	.50 cal.	91.5	90	1			Base	85.8	78.1
205	4/29	I-8	.50 cal.	91.5	90	1			Base	85.9	78.6
205	4/29	I-8	.50 cal.	91.5	90	1			Base	86.2	80.6
205	4/29	I-8	.50 cal.	91.5	90	1			Base	85.6	79.4
205	4/29	I-8	.50 cal.	91.5	90	1			Base	85.3	79.8
205	4/29	I-8	.50 cal.	91.5	90	1			Base	85.8	79.0
205	4/29	I-8	.50 cal.	91.5	90	1			Base	86.7	79.3
205	6/2	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	106.1	97.3
205	6/2	Post-fled.	.50 cal.	122	90	Post-fled.			Base	84.8	78.6
205	6/2	Post-fled.	.50 cal.	122	90	Post-fled.			Base	84.5	78.3
205	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	84.9	78.1
205	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	86.6	79.9
205	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Cavity	102.4	93.6
205	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Cavity	106.2	97.4
205	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	112.0	103.7
205	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	112.3	104.1

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
205	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Base	95.2	86.9
205	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Base	95.6	86.9
205	6/2	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	98.1	91.7
205	6/2	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	101.2	94.6
205	6/2	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	113.0	105.2
205	6/2	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	113.0	105.3
205	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	115.3	107.6
205	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	104.4	101.6
205	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.3	102.2
205	6/2	Post-fled.	.50 cal.	122	90	Post-fled.			Base	85.6	79.6
205	6/2	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	106.5	94.7
205	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Cavity	110.3	97.7
205	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Cavity	108.8	96.6
205	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	88.1	80.8
205	6/2	Post-fled.	.50 cal.	91.5	90	Post-fled.			Base	87.6	80.5
205	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Base	94.9	88.7
205	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Base	94.1	87.1
205	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	112.2	100.4
205	6/2	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	110.8	99.1
205	6/2	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	118.1	107.3
205	6/2	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	102.7	97.5
205	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	109.8	104.7
205	6/2	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	119.9	109.9
206	5/4	I-2	.50 cal.	61	90	0			Base	103.2	95.8
206	5/9	I-7	.50 cal.	30.5	90	2	3.3		Base	96.9	89.7
206	5/9	I-7	.50 cal.	30.5	90	2	3.3		Base	103.2	95.5
206	5/9	I-7	.50 cal.	30.5	90	2	3.3		Base	104.6	96.8
206	5/9	I-7	.50 cal.	30.5	90	2	3.3		Base	103.4	95.7
206	6/14	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	107.0	103.5
206	6/14	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	118.2	109.1
206	6/14	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	118.0	108.0
206	6/14	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	102.5	96.8
206	6/14	Post-fled.	.50 cal.	61	90	Post-fled.			Base	93.6	84.9
206	6/14	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	111.0	99.7
206	6/14	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	103.0	92.4
206	6/14	Post-fled.	.50 cal.	122	90	Post-fled.			Base	85.2	79.4
206	6/14	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	103.6	100.4
206	6/14	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	108.2	101.4
206	6/14	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	110.4	103.0

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
206	6/14	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	103.1	99.8
206	6/14	Post-fled.	.50 cal.	61	90	Post-fled.			Base	94.6	91.1
206	6/14	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	104.8	96.7
206	6/14	Post-fled.	.50 cal.	122	90	Post-fled.			Cavity	100.7	92.9
206	6/14	Post-fled.	.50 cal.	122	90	Post-fled.			Base	88.7	83.6
208	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	101.9	96.4
208	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	103.5	98.3
208	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	102.2	96.6
208	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	103.7	98.3
208	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	102.4	97.0
208	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	106.8	96.4
208	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	102.4	92.5
208	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	106.9	96.9
208	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	107.1	96.8
208	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	108.3	97.9
208	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	107.0	96.6
208	5/11	Inactive	.50 cal.	30.5	90	Inactive			Base	95.7	87.6
208	5/11	Inactive	.50 cal.	30.5	90	Inactive			Base	97.2	89.9
208	5/11	Inactive	.50 cal.	30.5	90	Inactive			Base	99.6	91.8
208	5/11	Inactive	.50 cal.	30.5	90	Inactive			Base	97.6	89.8
208	5/11	Inactive	.50 cal.	30.5	90	Inactive			Cavity	101.7	90.6
208	5/11	Inactive	.50 cal.	30.5	90	Inactive			Cavity	103.3	92.4
208	5/11	Inactive	.50 cal.	30.5	90	Inactive			Cavity	105.6	94.4
208	5/11	Inactive	.50 cal.	30.5	90	Inactive			Cavity	103.7	92.9
208	5/11	Inactive	.50 cal.	61	90	Inactive			Base	82.7	72.8
208	5/11	Inactive	.50 cal.	61	90	Inactive			Base	87.0	78.0
208	5/11	Inactive	.50 cal.	61	90	Inactive			Base	89.0	79.6
208	5/11	Inactive	.50 cal.	61	90	Inactive			Base	88.7	79.3
208	5/11	Inactive	.50 cal.	61	90	Inactive			Base	88.0	78.5
208	5/11	Inactive	.50 cal.	61	90	Inactive			Base	88.4	80.2
208	5/11	Inactive	.50 cal.	61	90	Inactive			Base	88.9	81.3
208	5/11	Inactive	.50 cal.	61	90	Inactive			Base	89.0	81.5
208	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	91.8	80.7
208	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	95.9	85.2
208	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	98.3	87.0
208	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	98.1	87.2
208	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	97.9	87.2
208	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	97.7	86.8
208	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	97.3	86.2

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
208	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	97.5	86.0
211	5/13	Inactive	.50 cal.	15.2	90	Inactive			Cavity	106.6	100.7
211	5/13	Inactive	.50 cal.	15.2	90	Inactive			Base	99.9	96.3
211	5/13	Inactive	.50 cal.	30.5	90	Inactive			Cavity	99.2	94.5
211	5/13	Inactive	.50 cal.	30.5	90	Inactive			Base	93.1	91.8
211	5/13	Inactive	.50 cal.	30.5	90	Inactive			Cavity	94.6	90.1
211	5/13	Inactive	.50 cal.	30.5	90	Inactive			Base	90.9	89.0
218	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	106.5	101.8
218	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	107.7	103.3
218	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	111.4	103.5
218	5/26	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	112.4	104.3
218	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	111.6	101.7
218	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	111.6	101.7
218	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	112.0	102.3
218	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	103.3	99.5
218	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	103.2	99.2
218	5/26	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	103.7	100.0
227	4/29	I-9	.50 cal.	61	90	0			Base	95.4	86.4
227	4/29	I-9	.50 cal.	61	90	0			Base	95.8	87.9
227	4/29	I-9	.50 cal.	61	90	0			Base	93.1	85.3
227	4/29	I-9	.50 cal.	61	90	0			Base	93.7	87.0
227	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	106.7	102.3
227	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	107.4	102.9
227	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	119.5	108.2
227	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	118.9	107.7
227	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	106.6	100.0
227	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	106.4	99.6
227	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	120.3	109.2
227	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	118.6	108.0
227	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Base	91.7	85.4
227	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Base	84.0	76.7
227	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	111.1	100.2
227	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	104.1	91.9
228	4/26	I-4	.50 cal.	122	90	1			Base	86.2	78.2
228	4/26	I-4	.50 cal.	122	90	1			Base	93.0	85.2
228	4/29	I-7	.50 cal.	91.5	90	2	3.7		Base	89.2	86.0
228	4/29	I-7	.50 cal.	91.5	90	2	3.7		Base	84.4	81.3
228	4/29	I-7	.50 cal.	91.5	90	2	3.7		Base	83.9	80.6
228	4/29	I-7	.50 cal.	91.5	90	2	3.7		Base	89.0	85.9

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
228	4/29	I-7	.50 cal.	91.5	90	2	3.7		Base	84.8	82.0
231	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	113.6	107.4
231	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	114.2	108.0
231	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	115.7	109.4
231	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	107.9	103.8
231	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	108.5	104.8
231	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	109.9	105.9
231	5/11	Inactive	.50 cal.	30.5	90	Inactive			Base	105.1	100.3
231	5/11	Inactive	.50 cal.	30.5	90	Inactive			Base	105.7	100.0
231	5/11	Inactive	.50 cal.	30.5	90	Inactive			Base	101.6	98.2
231	5/11	Inactive	.50 cal.	30.5	90	Inactive			Cavity	110.0	103.3
231	5/11	Inactive	.50 cal.	30.5	90	Inactive			Cavity	110.6	104.1
231	5/11	Inactive	.50 cal.	30.5	90	Inactive			Cavity	106.0	99.3
231	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	102.4	95.6
231	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	96.9	90.1
231	5/11	Inactive	.50 cal.	61	90	Inactive			Base	95.2	89.5
231	5/11	Inactive	.50 cal.	61	90	Inactive			Base	89.4	83.4
236	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	108.0	103.2
236	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	104.2	99.4
236	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	109.2	103.6
236	5/11	Inactive	.50 cal.	15.2	90	Inactive			Base	106.2	100.1
236	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	112.6	104.0
236	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	109.0	100.6
236	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	114.1	105.7
236	5/11	Inactive	.50 cal.	15.2	90	Inactive			Cavity	110.4	101.9
236	5/11	Inactive	.50 cal.	30.5	90	Inactive			Base	102.2	94.8
236	5/11	Inactive	.50 cal.	30.5	90	Inactive			Base	102.6	95.2
236	5/11	Inactive	.50 cal.	30.5	90	Inactive			Base	105.6	98.5
236	5/11	Inactive	.50 cal.	30.5	90	Inactive			Cavity	110.0	101.1
236	5/11	Inactive	.50 cal.	30.5	90	Inactive			Cavity	110.0	101.3
236	5/11	Inactive	.50 cal.	30.5	90	Inactive			Cavity	112.8	104.1
236	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	104.5	94.4
236	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	108.5	98.5
236	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	106.4	96.2
236	5/11	Inactive	.50 cal.	61	90	Inactive			Cavity	105.5	95.9
236	5/11	Inactive	.50 cal.	61	90	Inactive			Base	92.7	83.2
236	5/11	Inactive	.50 cal.	61	90	Inactive			Base	95.1	85.6
236	5/11	Inactive	.50 cal.	61	90	Inactive			Base	92.8	82.5
236	5/11	Inactive	.50 cal.	61	90	Inactive			Base	92.6	82.7

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Resp.	Rec. time (min)	Rem.	Mic Pos.	SEL (dB) Flat	A
271	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	106.5	103.5
271	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Base	105.8	103.2
271	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	118.6	108.3
271	6/3	Post-fled.	.50 cal.	15.2	90	Post-fled.			Cavity	118.0	107.8
271	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	115.1	103.6
271	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Cavity	115.5	103.9
271	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	99.5	95.3
271	6/3	Post-fled.	.50 cal.	30.5	90	Post-fled.			Base	100.2	97.1
271	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	111.5	99.7
271	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Cavity	112.3	100.3
271	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Base	94.5	91.1
271	6/3	Post-fled.	.50 cal.	61	90	Post-fled.			Base	95.0	91.3
294	6/21	Post-fled.	.50 cal.	15.2	0	Post-fled.			Base	104.0	101.6
294	6/21	Post-fled.	.50 cal.	15.2	0	Post-fled.			Base	105.0	102.3
294	6/21	Post-fled.	.50 cal.	15.2	0	Post-fled.			Cavity	111.3	104.8
294	6/21	Post-fled.	.50 cal.	15.2	0	Post-fled.			Cavity	112.0	105.7
294	6/21	Post-fled.	.50 cal.	30.5	0	Post-fled.			Cavity	109.6	103.8
294	6/21	Post-fled.	.50 cal.	30.5	0	Post-fled.			Cavity	109.9	104.3
294	6/21	Post-fled.	.50 cal.	30.5	0	Post-fled.			Base	101.1	96.5
294	6/21	Post-fled.	.50 cal.	30.5	0	Post-fled.			Base	101.5	97.5
294	6/21	Post-fled.	.50 cal.	61	0	Post-fled.			Base	96.7	90.5
294	6/21	Post-fled.	.50 cal.	61	0	Post-fled.			Base	96.2	91.0
294	6/21	Post-fled.	.50 cal.	61	0	Post-fled.			Cavity	107.5	100.6
294	6/21	Post-fled.	.50 cal.	61	0	Post-fled.			Cavity	106.8	100.9
294	6/21	Post-fled.	.50 cal.	91.5	0	Post-fled.			Base	88.4	83.9
294	6/21	Post-fled.	.50 cal.	91.5	0	Post-fled.			Cavity	103.2	95.1
294	6/21	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	99.3	92.1
294	6/21	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	100.2	94.2
294	6/21	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	86.4	81.7
294	6/21	Post-fled.	.50 cal.	122	0	Post-fled.			Cavity	87.1	82.5

Table D 4. Representative unweighted spectra for experimental .50-caliber blank fire on Fort Stewart, GA.

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																			Calc. Overall SEL
							10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	
6	4/21	.50 cal.	61	2	1.7	Base	50	57	59	62	67	70	73	75	76	79	82	82	81	78	76	70	71	71	72	74	74	74	74	73	73	72	72	70	68	67	64	58	52	49	90.1
6	4/21	.50 cal.	61	2	1.7	Base	48	57	59	62	66	69	72	74	75	77	81	82	80	77	75	69	70	69	71	72	71	72	73	73	74	74	72	69	68	66	64	59	53	49	89.1
6	4/21	.50 cal.	61	2	1.7	Base	49	60	59	65	68	70	74	76	77	80	83	83	82	79	77	71	72	70	72	74	73	74	74	73	73	72	75	71	70	70	65	61	54	49	90.8
6	4/29	.50 cal.	91.5	2	10.8	Base	85	88	89	87	81	80	81	79	77	74	77	77	77	72	69	66	61	69	70	70	70	70	69	68	68	66	65	63	60	59	54	33	45		94.9
6	4/29	.50 cal.	91.5	2	10.8	Base	61		51	60	60	65	69	71	72	73	76	76	77	72	66	62	59	66	68	67	67	68	68	66	66	65	63	62	59	58	52		40		84.3
6	4/29	.50 cal.	91.5	2	10.8	Base			54	51	48	63	64	65	69	72	75	77	77	72	66	59	53	59	64	63	63	63	63	63	64	62	61	60	58	56	53		33		83.1
6	4/29	.50 cal.	91.5	2	10.8	Base			54	59	64	67	69	72	72	74	77	78	78	72	67	61	58	66	68	69	68	69	68	67	67	66	63	62	60	57	53		38		85.1
6	4/29	.50 cal.	91.5	2	10.8	Base	67		58	63	63	68	70	70	74	74	77	78	79	73	67	61	59	64	67	68	68	68	68	68	66	66	64	63	59	59	54		40		85.5
6	5/27	.50 cal.	30.5	Post-fled.		Base	70	68	67	73	72	79	80	82	84	86	87	89	93	94	90	89	84	83	80	83	83	83	84	83	83	85	83	83	82	83	83	82	81	76	100.8
6	5/27	.50 cal.	30.5	Post-fled.		Base		65	67	69	71	77	80	82	83	86	86	89	93	94	90	89	82	83	78	81	82	81	82	81	83	83	82	82	81	82	82	82	81	76	100.5
6	5/27	.50 cal.	30.5	Post-fled.		Cavity		60	67	72	71	78	78	78	78	83	85	95	105	103	92	91	86	91	86	90	80	82	80	80	78	75	74	73	71	68	64	59	54	47	107.9
6	5/27	.50 cal.	30.5	Post-fled.		Cavity	55	66	70	73	75	77	78	79	79	82	84	95	105	104	93	91	86	91	86	89	79	82	79	80	78	75	73	72	71	68	63	59	53	45	108.0
6	5/27	.50 cal.	61	Post-fled.		Base	59	62	63	70	68	73	75	77	81	81	80	80	85	83	77	75	74	77	75	76	77	75	76	76	77	76	75	76	74	74	72	71	67	59	92.5
6	5/27	.50 cal.	61	Post-fled.		Base		50	60	65	67	72	74	76	79	81	80	79	83	82	75	75	73	74	73	74	75	73	73	74	75	75	73	74	73	72	71	69	65	57	91.0
6	5/27	.50 cal.	61	Post-fled.		Cavity	64	56	62	68	66	72	74	76	80	83	85	91	101	97	90	86	83	79	78	85	67	67	66	75	71	71	70	68	64	63	56	48	44	29	103.3
6	5/27	.50 cal.	61	Post-fled.		Cavity	50		54	60	64	70	73	74	79	82	84	89	100	95	89	85	81	76	77	84	67	67	64	73	69	68	69	67	64	62	54	47	42	32	101.9
6	5/27	.50 cal.	122	Post-fled.		Base	56	53	56	61	62	68	71	71	74	76	77	74	75	72	64	65	63	65	66	68	68	69	69	70	70	69	66	63	62	60	57	52	45	34	84.8
6	5/27	.50 cal.	122	Post-fled.		Base	48	51	58	58	65	68	71	72	75	77	77	74	76	72	65	65	65	64	65	68	68	69	70	69	70	69	66	64	62	60	57	52	45	26	85.3
6	5/27	.50 cal.	122	Post-fled.		Cavity	53	53	58	62	62	68	70	70	73	76	80	83	93	88	81	79	71	68	67	76	60	62	61	69	64	59	59	58	57	52	44	35	34	29	95.0
6	5/27	.50 cal.	122	Post-fled.		Cavity	47	51	57	61	65	68	71	71	74	78	80	83	93	89	81	80	73	69	67	76	59	63	61	69	64	60	60	60	57	53	45	37	31		95.2
10	5/24	.50 cal.	30.5	2	13.6	Base	69	66	75	76	80	80	81	83	84	85	88	93	93	90	90	90	90	84	79	83	84	83	86	86	86	85	84	83	82	81	80	76	73	70	101.1
10	5/24	.50 cal.	30.5	2	13.6	Base	75	70	73	80	79	79	82	84	85	85	89	94	94	92	91	90	91	86	83	85	84	86	87	87	87	86	85	84	84	83	82	79	77	73	102.3
10	5/24	.50 cal.	30.5	2	13.6	Base	76	71	72	77	75	79	80	82	83	84	88	93	93	90	90	89	89	84	81	83	84	85	86	86	86	85	83	83	82	81	80	76	72	68	101.0
10	5/24	.50 cal.	30.5	2	13.6	Base	72	66	69	78	73	81	81	83	83	85	88	93	93	91	90	89	91	84	82	84	84	83	84	84	85	84	82	82	81	80	80	75	72	69	101.0
10	6/23	.50 cal.	15.2	Post-fled.		Base	66	66	81	73	83	83	83	85	87	89	90	91	90	92	95	95	89	88	90	83	83	84	85	86	87	87	87	84	85	85	85	84	82	78	103.2
10	6/23	.50 cal.	15.2	Post-fled.		Cavity	66	66	75	71	78	79	80	80	81	81	88	102	105	97	92	88	91	91	85	88	85	85	82	78	81	82	77	73	69	71	66	63	63	62	107.8
10	6/23	.50 cal.	15.2	Post-fled.		Base	64	72	82	77	83	84	84	86	88	90	92	92	91	92	95	96	89	88	89	84	83	85	84	86	88	87	87	84	86	87	87	85	84	80	103.7
10	6/23	.50 cal.	15.2	Post-fled.		Cavity	61	61	73	72	78	80	80	81	82	82	88	102	105	98	92	89	92	92	86	89	84	86	83	80	81	80	76	73	70	71	67	63	61	60	108.1
10	6/23	.50 cal.	30.5	Post-fled.		Cavity	60	59	72	68	77	78	80	80	82	82	91	101	105	95	90	87	88	87	85	85	84	84	81	77	80	77	75	69	65	66	63	60	59	59	107.1
10	6/23	.50 cal.	30.5	Post-fled.		Base	59	59	74	68	77	79	81	82	85	87	89	91	91	92	94	91	88	81	78	79	81	80	81	82	81	80	77	76	74	72	70	67	64	62	100.7
10	6/23	.50 cal.	30.5	Post-fled.		Cavity	61	57	73	70	77	78	80	81	82	83	92	102	105	96	91	88	89	88	85	85	85	84	80	78	79	77	72	66	64	64	64	61	62	61	107.9
10	6/23	.50 cal.	30.5	Post-fled.		Base	66	64	74	70	78	79	82	83	85	88	90	92	92	93	95	91	87	84	79	79	81	80	81	82	82	81	78	76	76	74	72	69	66	64	101.4
10	6/23	.50 cal.	45.7	Post-fled.		Base	56	58	68	62	73	76	77	79	82	84	86	87	88	90	89	85	84	75	72	72	73	74	75	77	77	75	73	72	70	68	66	62	59	55	96.8
10	6/23	.50 cal.	45.7	Post-fled.		Cavity	64	61	67	63	72	74	75	77	81	83	89	98	101	96	87	84	83	83	80	76	77	76	73	73	75	73	70	65	63	59	55	52	52	51	104.2
10	6/23	.50 cal.	45.7	Post-fled.		Cavity			46	45		45	48	56	63	66	80	89	92	89	81	76	74	73	72	71	69	68	64	64	64	61	55	55	50	49	44	43	47	48	95.5
10	6/23	.50 cal.	45.7	Post-fled.		Cavity	43	49	64	59	70	73	74	76	79	82	88	97	100	95	87	82	81	82	79	77	77	75	71	70	72	70	65	63	59	56	53	51	51	52	103.1
10	6/23	.50 cal.	45.7	Post-fled.		Base		48	53	58	64	67	69	73	75	77	79	80	80	83	82	78	78	70	66	66	66	65	64	68	69	68	65	63	62	60	57	54	52	50	89.6
10	6/23	.50 cal.	45.7	Post-fled.		Base	55	55	67	63	72	74	76	78	81	83	85	85	86	89	88	83	83	75	71	72	71	71	71	74	74	73	72	70	69	66	63	60	56	54	95.4
10	6/23	.50 cal.	61	Post-fled.		Cavity	51	50	60	63	67	71	74	77	79	84	88	96	99	94	87	79	74	70	72	76	76	77	71	72	78	76	72	68	61	61	56	52	50	49	102.3
10	6/23	.50 cal.	61	Post-fled.		Cavity	48	56	68	65	74	77	79	83	85	90	94	102	106	100	93	86	81	78	80	83	84	85	81	80	81	78	72	69	64	64	60	57	54	54	108.6
10	6/23	.50 cal.	61	Post-fled.		Base	54	48	63	62	69	72	74	77	78	81	82	83	84	86	85	79	78	71	67	70	70	73	71	71	71	72	71	67	66	64	61	58	55	51	92.8
10	6/23	.50 cal.	61	Post-fled.		Base	56	57	71	66	76	78	80	83	85	88	89	90	91	92	91	85	84	77	74	75	77	79	79	78	79	79	76	74	73	72	69	66	63	59	99.3
10	6/23	.50 cal.	122	Post-fled.		Base	52	51	62	59	67	70	72	73	75	75	77	76	76	72	64	60	58	59	61	63	66	67	68	67	66	66	64	61	60	56	53	48	47	47	84.7
10	6/23	.50 cal.	122	Post-fled.		Base	42	45	59	57	65	66	68	70	72	72	74	73	73	70	61	57	56	56	58	60	62	64	64	64	63	63	62	59	57	54	50	45	43	43	81.7

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec. Time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
10	6/23	.50 cal.	122	Post-fled.		Cavity	64	64	66	66	69	71	72	74	76	77	83	88	91	78	69	64	60	62	65	68	71	71	64	64	67	66	60	52	47	47	45	43	46	47	93.7
10	6/23	.50 cal.	122	Post-fled.		Cavity	43	44	59	56	65	66	69	71	73	75	80	85	88	75	65	60	57	58	63	65	69	72	71	61	75	77	68	64	59	50	50	41	41	42	91.1
12	4/28	.50 cal.	122	0		Base	52	56	58	63	64	68	71	73	75	76	77	72	71	73	68	61	64	67	68	70	70	71	71	71	68	68	66	64	62	59	59	45	41	42	84.9
12	4/28	.50 cal.	122	0		Base	56	53	57	60	64	65	69	72	74	75	75	72	70	74	68	60	65	67	67	69	69	70	70	70	68	68	66	63	61	59	58	45	41	42	84.1
12	4/28	.50 cal.	122	0		Base	57	56	60	61	65	67	70	72	75	76	76	71	71	74	68	61	64	67	67	69	70	70	70	70	68	67	65	63	62	60	60	44	41	42	84.6
12	4/28	.50 cal.	122	0		Base	48	56	57	61	63	66	70	71	75	75	76	71	69	72	68	60	62	65	66	68	68	68	69	68	67	67	65	62	61	59	58	43	38	39	83.8
12	6/11	.50 cal.	15.2	Post-fled.		Base	77	70	77	87	83	88	88	88	87	87	87	92	96	95	96	96	94	92	92	90	91	88	89	92	93	92	93	92	93	94	95	95	94	92	107.3
12	6/11	.50 cal.	30.5	Post-fled.		Cavity	81	70	69	72	75	80	76	75	81	84	89	96	114	101	92	89	91	100	89	100	94	90	89	88	85	87	87	83	82	81	76	74	69	65	114.4
12	6/11	.50 cal.	30.5	Post-fled.		Base	73	65	71	77	76	80	82	82	84	86	84	88	91	88	90	92	89	89	85	85	83	83	82	83	84	83	83	82	83	84	82	82	80	76	100.5
12	6/11	.50 cal.	61	Post-fled.		Base	59	56	61	72	69	75	78	80	82	83	84	87	90	88	90	87	83	81	79	80	79	79	80	81	82	81	81	79	78	77	75	74	71	66	97.8
12	6/11	.50 cal.	61	Post-fled.		Cavity	83	79	78	87	81	84	81	77	76	80	85	92	111	98	89	96	94	99	92	98	96	94	92	92	90	89	87	86	83	83	81	80	79	78	112.1
12	6/11	.50 cal.	122	Post-fled.		Cavity	49	42	54	63	63	68	70	72	75	79	82	91	106	93	84	79	74	76	80	91	88	83	84	81	75	78	76	72	67	63	57	52	48	47	106.8
12	6/11	.50 cal.	122	Post-fled.		Base	52	49	52	62	61	67	69	70	72	73	73	76	84	73	74	72	69	67	68	69	69	69	69	69	69	67	67	65	64	63	60	56	50	44	87.2
23	4/28	.50 cal.	122	0		Base	50	49	59	61	66	67	71	73	75	77	78	80	78	72	64	60	63	66	68	71	69	69	69	68	68	67	66	66	64	63	61	56	50	46	86.5
23	4/28	.50 cal.	122	0		Base	46	49	62	61	66	69	72	74	75	77	79	80	79	74	66	61	62	65	69	72	70	71	71	70	69	68	67	66	65	64	61	57	51	46	87.4
23	4/28	.50 cal.	122	0		Base	41	52	59	60	67	68	71	73	76	78	79	81	79	74	66	61	62	65	68	71	70	70	70	69	69	68	66	66	65	64	61	57	50	44	87.4
23	4/28	.50 cal.	122	0		Base	48	52	63	60	69	70	73	74	77	78	80	81	80	75	66	63	64	66	70	72	71	72	71	70	70	69	67	67	66	65	62	58	52	46	88.4
23	5/3	.50 cal.	30.5	0		Base				68	61	72	70	74	75	78	80	81	82	82	82	76	71	69	73	71	70	72	72	72	69	68	67	65	60	57	50		41		90.2
23	5/3	.50 cal.	30.5	0		Base	62	63	69	75	65	71	74	77	79	81	83	84	85	85	84	80	72	71	73	72	74	73	74	74	72	70	70	67	62	59	53	38	48		93.0
23	5/3	.50 cal.	30.5	0		Base	62		68		63	69	73	77	79	81	83	84	86	85	84	80	72	70	71	69	72	72	70	72	71	69	68	66	61	59	51		41		92.9
23	5/3	.50 cal.	30.5	0		Base	71			70	75	77	76	80	82	84	85	87	88	87	86	81	73	74	74	74	75	75	75	74	74	72	71	69	64	61	52		43		95.3
23	5/3	.50 cal.	30.5	0		Base			73	65	72	75	78	81	82	85	87	88	89	88	88	83	76	75	76	75	76	75	75	76	75	73	72	70	65	63	55		48		96.3
23	5/3	.50 cal.	30.5	0		Base			69	68	66	74	79	81	83	86	87	88	90	89	89	84	77	75	75	74	74	74	75	75	75	74	73	70	66	63	55		41		97.0
23	5/3	.50 cal.	30.5	0		Base	64		72	75	75	81	81	83	85	87	90	91	92	92	91	86	79	77	78	78	79	78	79	79	77	77	75	72	69	66	57		48		99.4
23	5/3	.50 cal.	30.5	0		Base	62		68	74	73	80	80	82	85	87	89	90	91	90	90	85	78	76	77	77	77	77	77	77	76	75	74	72	68	64	58		46		98.5
23	5/6	.50 cal.	15.2	2	5.6	Base	59	64	67	70	73	75	76	78	80	83	86	88	89	85	81	85	83	74	77	76	81	82	81	82	81	79	81	81	80	78	78	79	78	73	96.8
23	5/6	.50 cal.	15.2	2	5.6	Base	73	75	82	82	85	86	88	90	92	95	98	100	101	98	93	96	94	86	88	89	90	91	92	91	91	91	89	89	89	90	90	89	88	84	108.3
23	5/6	.50 cal.	15.2	2	5.6	Base	66	70	75	76	77	80	81	84	85	88	92	94	95	91	87	90	87	79	82	83	84	85	85	84	84	84	84	83	83	83	82	82	82	78	101.8
23	5/6	.50 cal.	15.2	2	5.6	Base	78	75	78	84	82	86	88	90	92	94	98	100	101	97	93	96	94	86	88	90	90	91	91	91	90	90	90	89	89	89	89	89	87	84	108.0
23	6/14	.50 cal.	15.2	Post-fled.		Base	54	68	79	75	84	85	86	89	91	92	92	91	88	96	100	93	92	91	87	87	88	90	93	92	92	90	89	91	91	89	89	87	86	83	106.3
23	6/14	.50 cal.	15.2	Post-fled.		Base	68	70	81	80	86	86	88	90	92	93	93	92	90	97	101	94	93	92	88	88	90	92	95	94	93	91	92	91	91	89	89	87	85	81	107.3
23	6/14	.50 cal.	15.2	Post-fled.		Base	80	72	83	85	87	87	89	91	93	94	95	93	90	97	102	95	94	92	89	89	90	92	96	95	92	93	92	93	92	91	90	88	86	82	108.2
23	6/14	.50 cal.	15.2	Post-fled.		Cavity		66	79	71	79	80	80	81	82	84	89	96	117	103	91	94	90	105	90	98	90	93	90	87	84	82	80	80	78	77	75	75	72	66	117.2
23	6/14	.50 cal.	15.2	Post-fled.		Cavity	67	71	80	78	81	82	82	82	84	86	91	98	117	104	93	95	91	105	92	99	91	94	92	89	87	84	82	81	79	78	76	75	71	66	118.1
23	6/14	.50 cal.	15.2	Post-fled.		Cavity	80	74	83	82	82	83	83	84	85	88	93	100	118	106	95	97	92	106	93	100	92	95	92	89	87	84	82	82	80	78	77	75	72	68	118.9
23	6/14	.50 cal.	30.5	Post-fled.		Cavity	73	69	77	71	76	80	79	79	84	86	90	97	116	103	90	92	90	102	88	94	85	87	86	84	81	77	74	75	72	68	68	66	64	63	116.8
23	6/14	.50 cal.	30.5	Post-fled.		Cavity	82	76	79	76	80	83	84	83	87	90	94	101	119	106	95	95	94	104	91	97	88	90	89	86	83	80	78	77	74	71	70	69	67	65	119.4
23	6/14	.50 cal.	30.5	Post-fled.		Base	62	61	72	70	78	79	82	85	88	90	92	90	94	96	94	89	86	82	82	81	83	82	83	84	83	84	85	81	81	78	76	74	71	68	102.4
23	6/14	.50 cal.	30.5	Post-fled.		Base	62	61	70	65	76	79	80	84	87	89	91	90	93	95	92	88	85	80	80	81	81	81	82	81	81	82	81	78	77	76	73	71	68	64	101.3
23	6/14	.50 cal.	30.5	Post-fled.		Base	60	63	73	68	80	81	83	86	89	91	93	91	95	97	94	90	86	82	82	83	84	83	85	85	83	81	81	79	78	76	74	72	68	65	103.2
23	6/14	.50 cal.	61	Post-fled.		Base	49	57	67	65	73	75	77	80	83	85	85	86	87	87	82	77	74	73	75	74	75	75	76	76	75	74	73	71	70	67	64	60	55	52	94.8
23	6/14	.50 cal.	61	Post-fled.		Base	55	56	68	64	75	76	79	82	84	86	86	86	88	87	83	77	75	73	75	75	76	77	77	77	76	75	73	71	70	68	65	61	56	53	95.5
23	6/14	.50 cal.	61	Post-fled.		Base	51	60	66	69	72	74	78	79	82	85	85	84	86	85	81	75	72	70	73	74	74	76	75	76	74	74	72	70	68	66	63	59	55	52	93.8
23	6/14	.50 cal.	61	Post-fled.		Cavity	66	66	74	73	79	81	84	86	88	92	95	103	116	105	94	87	85	81	84	92	83	84	91	86	78	74	70	76	69	65	64	61	59	58	116.8
23	6/14	.50 cal.	122	Post-fled.		Cavity	65	64	63	64	62	66	67	70	73	76	78	84	95	84	73	67	63	65	68	73	65	65	72	67	59	56	50	56	49	45	43	41	41	42	96.0
23	6/14	.50 cal.	122	Post-fled.		Cavity	60	63	63	65	68	68	70	73	76	78	81	87	99	87	74	68	64	65	70	75	67	67	73	69	61	58	52	57	51	47	44	42	42	43	99.5

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
23	6/14	.50 cal.	122	Post-fled.		Cavity	68	71	68	67	67	68	71	73	76	79	81	88	100	89	76	69	65	66	70	76	67	67	74	70	60	59	52	58	51	47	44	43	42	43	100.9
23	6/14	.50 cal.	122	Post-fled.		Base	46	47	54	55	63	66	68	70	73	74	72	72	69	69	63	58	56	61	64	65	65	67	66	64	64	63	61	59	58	54	49	43	42	43	81.6
23	6/14	.50 cal.	122	Post-fled.		Base	49	46	61	57	65	68	70	73	75	76	75	74	72	72	65	59	57	63	66	66	67	68	68	67	66	65	63	61	59	55	51	45	43	43	84.0
23	6/14	.50 cal.	122	Post-fled.		Base	57	59	62	60	67	69	71	73	76	77	76	75	73	73	67	60	58	64	67	67	69	70	69	68	66	66	64	61	59	56	51	46	43	43	85.0
30	6/3	.50 cal.	61	Post-fled.		Base	65		64	65	70	71	76	78	79	81	82	82	82	78	73	73	68	73	77	76	75	76	77	75	74	74	72	70	69	66	62	50	49		91.0
30	6/3	.50 cal.	61	Post-fled.		Base	69	61	64	64	69	72	76	78	79	82	83	83	83	78	74	74	69	74	77	76	78	76	76	76	75	74	72	71	69	67	63	51	49		91.7
30	6/3	.50 cal.	61	Post-fled.		Cavity	66		58	65	70	74	76	78	80	83	86	93	103	91	82	83	79	74	79	89	84	79	75	87	84	77	75	67	64	59	59	55	51	41	104.1
30	6/3	.50 cal.	61	Post-fled.		Cavity	67		69	66	74	74	77	78	81	84	87	94	104	93	83	83	81	76	79	91	85	80	75	89	86	79	79	71	68	64	63	60	54	48	105.0
30	6/3	.50 cal.	15.2	Post-fled.		Cavity	76		74	73	76	80	83	80	84	84	91	99	111	99	91	89	90	95	92	98	92	92	90	93	90	88	87	83	80	76	75	72	69	64	112.5
30	6/3	.50 cal.	15.2	Post-fled.		Base	71	75	79	82	81	84	84	84	85	89	92	92	93	94	94	89	86	88	88	91	88	91	91	92	92	92	91	88	87	87	88	86	84	80	104.6
30	6/3	.50 cal.	30.5	Post-fled.		Base	78		73	64		76	71	74	78	82	84	86	86	87	84	80	74	77	80	81	79	78	79	80	80	80	77	76	74	74	72	68	65	57	95.1
30	6/3	.50 cal.	30.5	Post-fled.		Base	70		76	70	73	80	80	80	83	86	87	89	89	89	87	82	77	80	82	83	81	83	82	83	84	82	81	79	79	77	77	72	68	60	98.1
30	6/3	.50 cal.	30.5	Post-fled.		Cavity			76	79	76	76	75	73	79	79	83	94	103	93	85	82	81	83	84	91	83	85	80	86	83	79	77	74	67	67	62	58	56	49	104.5
30	6/3	.50 cal.	30.5	Post-fled.		Cavity			74	71	73	78	79	79	80	82	86	96	106	96	89	85	85	86	86	95	86	89	83	90	86	84	82	77	75	69	68	65	61	56	107.7
36	5/19	.50 cal.	61	2	2.1	Base			65	69	68	74	76	77	80	81	82	80	76	77	74	69	65	68	68	70	72	74	74	73	72	71	69	69	66	65	61	43	46		89.6
36	5/19	.50 cal.	61	2	2.1	Base	70		69	72	61	76	77	78	81	83	84	81	77	77	75	70	68	69	69	72	74	74	74	74	74	72	71	70	67	66	61	45	48		90.9
36	5/19	.50 cal.	61	2	2.1	Base	61		55	67	67	75	77	78	81	83	84	80	79	77	75	69	65	70	69	71	74	74	74	74	73	72	70	70	67	66	62	42	48		90.8
36	5/19	.50 cal.	61	2	2.1	Base	69		66	68	73	75	77	78	81	83	83	81	77	78	76	70	67	71	70	73	74	75	74	73	74	72	71	70	67	65	62	46	48		90.8
36	5/19	.50 cal.	61	2	2.1	Base	58		67	72	71	76	77	79	81	83	84	81	79	79	76	69	68	70	71	74	75	75	75	75	74	73	71	70	68	66	62	49	47		91.4
36	5/21	.50 cal.	91.5	1		Base		48	64	68	69	73	75	76	79	78	81	82	78	75	69	64	65	69	72	73	75	76	75	74	74	73	71	70	68	65	60	51	44		89.4
36	5/21	.50 cal.	91.5	1		Base	58	51	61	69	70	73	75	77	78	79	80	81	78	76	71	65	64	70	72	74	74	76	75	74	75	73	72	70	68	65	61	50	44		89.5
36	5/21	.50 cal.	91.5	1		Base	56	59	62	69	68	74	75	77	79	79	81	83	79	77	70	64	66	70	71	74	74	75	74	75	75	74	73	72	69	67	63	53	46	30	90.1
36	5/21	.50 cal.	91.5	1		Base		54	56	67	67	73	75	76	79	78	81	82	79	76	70	63	65	68	70	73	73	75	74	75	74	73	72	71	69	66	61	52	44		89.4
36	5/21	.50 cal.	91.5	1		Base	57	62	63	73	71	78	78	80	81	81	83	84	81	79	73	67	68	72	73	76	76	77	77	77	77	75	73	72	70	68	63	53	45	30	92.2
36	5/21	.50 cal.	91.5	1		Base	59	60	57	73	69	77	77	79	81	81	83	84	80	78	72	67	67	70	72	76	77	77	77	76	76	76	73	72	70	67	63	53	46		91.8
36	6/15	.50 cal.	15.2	Post-fled.		Base	79	72	75	82	81	84	85	86	88	92	95	96	98	97	98	93	89	89	88	89	89	87	88	88	87	89	88	86	85	85	84	82	81	77	105.8
36	6/15	.50 cal.	15.2	Post-fled.		Cavity	73	70	72	72	75	78	82	85	85	84	90	92	101	111	104	97	94	92	97	103	95	92	94	90	88	86	88	87	84	81	78	73	70	66	113.3
36	6/15	.50 cal.	30.5	Post-fled.		Cavity	61	55	63	72	71	77	79	80	82	85	90	90	98	110	100	90	90	88	91	98	91	90	92	86	85	82	84	82	79	75	70	65	62	61	110.9
36	6/15	.50 cal.	30.5	Post-fled.		Base	61	55	64	74	73	78	80	83	86	88	91	92	93	93	92	82	84	84	84	82	85	83	86	85	83	81	80	79	79	77	76	74	73	67	101.1
36	6/15	.50 cal.	61	Post-fled.		Base	59	61	59	67	67	71	74	76	78	79	82	85	83	80	75	68	70	70	74	73	74	73	73	73	72	72	69	68	68	67	65	62	57	53	91.0
36	6/15	.50 cal.	61	Post-fled.		Cavity	58	58	58	66	65	71	74	76	79	82	86	89	91	98	90	83	79	75	78	91	84	78	84	73	77	73	77	75	73	68	61	54	51	52	101.0
36	6/15	.50 cal.	122	Post-fled.		Cavity	54	52	55	63	62	68	69	71	73	77	80	80	86	93	84	76	71	70	72	86	80	72	78	67	69	63	67	67	60	54	46	45	47	48	95.3
36	6/15	.50 cal.	122	Post-fled.		Base	57	52	56	64	62	67	69	71	73	75	76	76	77	74	68	59	63	67	68	70	70	71	69	68	66	65	63	61	59	56	52	48	48	49	85.1
36	6/15	.50 cal.	15.2	Post-fled.		Cavity	77	64	71	81	78	82	83	81	85	87	89	95	102	99	97	94	94	89	93	96	93	96	97	93	92	87	87	84	83	77	75	71	68	63	107.9
36	6/15	.50 cal.	15.2	Post-fled.		Base	73	72	77	84	80	86	86	85	89	89	90	85	93	97	97	93	93	92	91	88	88	90	92	91	92	92	92	92	92	91	90	88	87	84	105.9
36	6/15	.50 cal.	30.5	Post-fled.		Base	65		62	70	74	78	80	81	84	86	88	86	89	92	92	89	85	84	83	83	83	84	85	84	85	85	83	81	81	80	78	77	74	70	100.0
36	6/15	.50 cal.	30.5	Post-fled.		Cavity	60		68	75	74	77	79	80	81	84	87	90	96	94	91	85	85	86	89	91	85	92	94	88	88	83	81	78	74	68	64	62	60	54	102.9
36	6/15	.50 cal.	61	Post-fled.		Base	64	62	57	69	68	74	75	77	80	81	83	81	82	84	83	75	74	77	78	77	80	83	86	83	82	78	76	75	74	73	70	67	62	50	94.4
36	6/15	.50 cal.	61	Post-fled.		Cavity	70	68	70	70	66	75	75	78	78	80	82	85	90	89	84	84	80	81	86	89	84	89	91	85	81	76	71	68	69	58	54	49	50	42	98.7
36	6/15	.50 cal.	122	Post-fled.		Cavity	63		59	65	63	71	72	73	75	78	80	81	85	84	81	77	74	71	75	78	73	82	84	79	75	68	63	60	58	48	44	39	42	36	92.5
36	6/15	.50 cal.	122	Post-fled.		Base	58	62	55	65	66	71	72	73	76	79	81	78	77	76	75	67	67	70	70	71	71	72	71	70	70	69	67	66	64	61	56	46	44	32	87.9
44	5/27	.50 cal.	61	Post-fled.		Base	52	55	57	70	66	74	76	79	82	84	85	83	87	90	85	81	76	72	74	74	73	74	76	78	79	77	76	76	74	73	72	69	65	58	95.4
44	5/27	.50 cal.	61	Post-fled.		Base	56	53	62	67	68	73	75	77	80	82	83	81	85	88	84	80	74	70	70	72	71	72	74	75	76	75	73	73	72	71	70	68	63	55	93.7
44	5/27	.50 cal.	61	Post-fled.		Base	50	50	59	65	67	73	75	77	80	82	83	81	85	87	83	79	74	70	71	72	71	72	73	75	77	75	73	72	72	71	70	67	63	56	93.3
44	5/27	.50 cal.	61	Post-fled.		Cavity	60	58	59	73	68	76	77	79	81	84	90	107	107	92	86	83	87	82	82	79	74	73	67	73	69	72	69	69	71	65	63	58	53	48	110.2
44	5/27	.50 cal.	61	Post-fled.		Cavity	65	63	67	72	71	74	75	77	80	83	88	105	106	89	85	82	85	80	79	77	71	71	66	70	67	69	65	65	68	63	61	55	50	46	108.6

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
							Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		
44	5/27	.50 cal.	61	Post-fled.		Cavity	54	55	63	68	70	75	76	78	80	83	89	106	105	90	84	81	82	79	79	76	69	71	65	73	69	70	66	67	68	62	59	54	49	45	108.5
44	5/27	.50 cal.	30.5	Post-fled.		Base	69	66	69	78	75	81	83	85	87	89	90	90	92	95	94	90	90	83	81	84	83	82	81	82	82	83	82	83	84	83	83	82	81	75	102.1
44	5/27	.50 cal.	30.5	Post-fled.		Base	68	63	69	76	75	80	82	84	86	88	89	89	92	94	94	88	89	83	80	83	81	82	81	81	81	81	80	83	83	83	82	82	81	76	101.3
44	5/27	.50 cal.	30.5	Post-fled.		Base	50	59	67	65	75	77	79	82	84	86	87	86	88	91	91	86	87	80	78	81	80	79	79	79	78	79	78	80	80	80	79	78	75	70	98.7
44	5/27	.50 cal.	30.5	Post-fled.		Cavity	83	77	73	82	77	82	80	84	86	89	93	113	112	96	94	91	100	92	90	89	85	82	81	82	80	75	75	74	75	70	68	66	62	57	115.7
44	5/27	.50 cal.	30.5	Post-fled.		Cavity	81	73	75	80	77	79	79	83	84	86	92	112	112	94	93	90	99	91	89	88	84	81	81	82	80	75	73	73	74	70	68	66	62	57	114.9
44	5/27	.50 cal.	30.5	Post-fled.		Cavity	57	63	74	70	76	77	76	80	82	84	89	110	109	92	90	88	97	88	86	86	81	79	79	81	79	75	71	70	71	68	67	62	60	56	112.9
44	5/27	.50 cal.	15.2	Post-fled.		Base	80	72	73	84	79	85	85	86	88	90	89	89	92	98	98	96	92	87	83	85	88	85	88	88	88	90	89	90	90	92	93	93	93	90	106.2
44	5/27	.50 cal.	15.2	Post-fled.		Base	76	68	75	83	82	84	86	86	88	90	89	88	90	98	98	96	94	89	84	84	87	85	86	87	87	87	87	89	89	92	92	93	91	88	105.8
44	5/27	.50 cal.	15.2	Post-fled.		Base	74	73	76	82	80	84	85	85	88	89	88	88	90	97	97	95	92	87	82	82	86	84	84	86	86	86	86	88	88	90	91	92	90	88	104.7
44	5/27	.50 cal.	15.2	Post-fled.		Cavity	84	78	74	84	79	83	85	85	88	91	96	113	112	97	95	94	103	93	94	92	90	86	84	82	80	78	76	76	76	71	68	70	66	59	116.4
44	5/27	.50 cal.	15.2	Post-fled.		Cavity	80	76	75	82	80	80	81	83	85	88	94	112	112	94	94	93	102	93	94	92	90	86	83	80	78	76	74	74	75	71	67	69	64	57	115.7
44	5/27	.50 cal.	15.2	Post-fled.		Cavity	76	72	77	79	78	79	81	82	84	87	93	112	111	93	93	91	102	92	93	92	89	85	82	81	80	77	74	74	77	72	68	69	66	58	114.8
51	4/27	.50 cal.	122	1		Base	55	54	56	66	63	69	72	75	76	76	75	73	74	70	63	62	61	67	69	71	72	72	73	70	68	67	64	63	61	58	54	48	43	42	85.2
51	4/27	.50 cal.	122	1		Base	40	50	51	60	60	67	70	71	73	74	72	71	72	68	60	58	57	63	65	67	67	69	70	67	65	64	62	60	59	55	52	46	40	39	82.4
51	4/27	.50 cal.	122	1		Base			44	45	48	55	57	64	67	68	66	65	65	62	56	53	49	56	57	58	60	61	63	62	58	58	56	54	53	50	46	41	39	38	75.7
51	4/27	.50 cal.	122	1		Base		32	42	46	59	61	66	69	70	71	71	69	69	66	58	57	54	60	62	64	64	65	67	65	63	62	60	59	57	54	50	45	40	38	79.9
51	4/27	.50 cal.	122	1		Base	55	51	51	66	60	69	70	72	73	74	69	68	69	67	58	58	58	64	67	70	70	70	70	68	65	65	62	60	58	55	51	45	40	39	82.5
51	4/27	.50 cal.	122	1		Base	51	46	57	62	63	67	69	72	73	73	72	70	71	67	60	59	57	63	67	68	69	70	70	68	65	65	62	60	58	55	51	45	40	39	82.4
51	4/29	.50 cal.	61	0		Base	55	44	61	61	68	70	73	75	78	80	80	83	88	88	81	80	73	68	71	73	72	74	75	75	74	73	70	69	69	66	63	59	54	50	93.4
51	4/29	.50 cal.	61	0		Base	46	46	56	61	67	68	73	76	78	80	80	83	88	88	81	80	73	69	70	72	72	74	75	76	74	74	71	70	69	66	63	60	54	50	93.7
51	4/29	.50 cal.	61	0		Base	53	55	60	63	68	69	73	76	77	80	80	83	88	88	81	80	73	69	71	73	72	75	74	77	74	73	71	69	68	66	63	58	54	50	93.5
51	4/29	.50 cal.	61	0		Base	53	52	60	65	67	69	73	76	78	80	80	83	88	87	81	79	72	69	72	73	73	76	76	75	74	74	71	69	68	66	62	59	54	50	93.3
51	4/29	.50 cal.	61	0		Base	49	55	62	61	67	70	73	76	78	80	79	83	88	88	81	80	73	69	71	73	73	75	75	75	74	73	71	70	68	66	63	60	55	51	93.5
51	4/29	.50 cal.	61	0		Base	55	53	61	65	67	69	73	76	78	80	79	82	87	87	81	79	72	67	71	72	72	74	75	77	75	73	70	70	68	66	63	58	53	50	93.0
51	4/29	.50 cal.	61	0		Base	49	48	62	61	68	70	73	75	79	80	80	83	88	88	82	80	73	68	71	73	73	75	76	76	74	73	71	69	68	66	63	59	53	50	93.7
51	4/29	.50 cal.	61	0		Base	55	54	60	65	66	69	73	75	79	80	79	83	88	88	81	80	73	69	72	73	73	76	76	77	73	73	70	70	68	66	63	59	53	49	93.6
51	5/3	.50 cal.	30.5	2	1.9	Base	54	59	63	66	68	70	73	74	77	80	82	85	86	87	86	83	81	76	73	74	77	75	77	78	76	76	72	71	69	67	65	60	57	54	94.4
51	5/26	.50 cal.	15.2	Post-fled.		Base	83	75	77	86	81	87	88	88	89	91	93	91	95	95	97	97	90	89	88	89	90	89	92	91	91	91	90	88	87	85	83	81	79	74	105.9
51	5/26	.50 cal.	15.2	Post-fled.		Base	74	69	75	83	80	86	87	88	89	91	92	91	95	95	97	97	89	87	86	89	90	90	92	92	91	91	90	88	87	86	85	83	81	79	105.8
51	5/26	.50 cal.	15.2	Post-fled.		Base	81	76	78	85	81	87	87	88	88	91	92	91	95	95	96	97	89	88	87	89	90	90	92	91	91	92	90	87	86	85	84	82	80	76	105.4
51	5/26	.50 cal.	15.2	Post-fled.		Cavity	87	77	71	81	77	82	84	87	86	88	92	97	116	109	93	94	91	103	96	98	100	96	93	93	90	88	86	85	82	81	78	74	72	68	117.6
51	5/26	.50 cal.	15.2	Post-fled.		Cavity	87	78	74	83	78	81	85	86	86	89	92	95	116	109	93	94	91	103	96	98	100	96	93	93	91	89	87	86	82	80	78	75	72	69	117.5
51	5/26	.50 cal.	15.2	Post-fled.		Cavity	84	78	71	79	77	80	83	85	85	87	91	95	116	108	92	93	89	102	95	97	100	96	92	92	90	88	86	87	84	82	80	76	74	70	116.8
51	5/26	.50 cal.	30.5	Post-fled.		Cavity	75	75	78	81	78	79	82	83	82	87	91	96	113	106	92	91	88	96	92	94	101	97	91	91	90	86	83	85	81	77	75	71	67	63	114.7
51	5/26	.50 cal.	30.5	Post-fled.		Cavity	71	74	73	80	75	78	80	82	82	86	90	95	113	106	91	90	85	96	91	93	100	97	91	91	91	86	84	85	80	77	75	70	66	63	114.4
51	5/26	.50 cal.	30.5	Post-fled.		Cavity	82	80	77	79	77	78	81	82	84	86	90	96	113	105	92	91	86	97	91	93	99	97	91	91	89	86	83	85	81	77	75	71	68	64	114.5
51	5/26	.50 cal.	30.5	Post-fled.		Base	67	62	73	78	76	80	82	83	86	89	90	88	91	93	96	89	89	83	83	84	86	86	88	90	89	87	86	82	81	78	76	73	70	64	102.3
51	5/26	.50 cal.	30.5	Post-fled.		Base	61		58	73	75	81	82	84	86	90	90	89	91	94	95	89	88	83	83	84	85	84	84	84	84	83	81	79	78	76	74	71	67	58	101.7
51	5/26	.50 cal.	30.5	Post-fled.		Base	64	67	72	75	77	81	83	84	87	89	90	89	91	94	95	89	88	83	83	83	83	84	84	84	83	83	80	79	78	76	74	71	67	59	101.6
52	5/13	.50 cal.	15.2	Inactive		Cavity	70	69	72	77	77	77	76	77	86	86	89	104	108	99	94	91	93	91	89	87	85	85	88	93	88	87	89	84	83	81	82	79	70	44	110.5
52	5/13	.50 cal.	15.2	Inactive		Base	80	72	80	84	85	86	88	90	92	90	92	93	92	93	96	92	86	91	94	93	91	93	88	90	89	89	89	88	88	87	85	82	75	52	105.3
52	5/13	.50 cal.	30.5	Inactive		Cavity	69	66	74	76	78	80	83	85	87	88	91	101	104	98	87	85	86	86	85	83	80	78	83	90	83	84	84	76	77	74	74	71	61	39	107.4
52	5/13	.50 cal.	61	Inactive		Cavity	62	50	63	71	71	77	79	81	84	87	87	92	96	91	81	81	77	79	79	77	75	74	78	84	78	78	80	70	71	66	68	64	53	36	99.6
52	5/13	.50 cal.	61	Inactive		Base	63	51	60	71	71	77	79	81	83	86	86	83	80	75	70	68	70	73	76	77	77	79	80	78	78	78	77	71	70	68	65	59	49	36	93.7
52	5/13	.50 cal.	15.2	Inactive		Base	76	73	78	83	82	85	84	84	82	84	83	86	89	91	85	87	83	84	85	85	86	86	88	87	87	87	86	85	85	84	83	82	79	78	100.4

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																			Calc. Overall SEL
							10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	
52	5/13	.50 cal.	15.2	Inactive		Cavity	90	80	77	84	81	77	79	83	81	83	82	84	85	102	97	89	96	90	94	91	93	88	88	89	87	87	86	86	86	85	86	77	75	74	105.8
52	5/13	.50 cal.	30.5	Inactive		Base	72	67	70	76	74	78	76	77	77	76	75	81	81	82	76	78	75	75	78	78	79	79	79	80	79	79	78	77	76	75	73	70	67	63	92.6
52	5/13	.50 cal.	30.5	Inactive		Cavity	86	80	78	76	74	78	73	75	75	75	75	76	81	96	91	83	87	84	87	84	85	83	82	83	81	81	81	79	79	79	80	71	70	69	99.5
52	5/13	.50 cal.	61	Inactive		Cavity	76	72	71	72	72	72	74	76	75	76	76	77	81	94	91	82	84	83	84	82	84	81	79	80	78	79	78	77	77	77	78	68	67	66	97.9
52	5/13	.50 cal.	61	Inactive		Base	71	72	71	75	74	74	76	80	85	83	84	82	79	75	74	74	73	75	78	78	80	79	78	77	76	76	74	73	72	71	70	64	61	60	92.9
53	5/4	.50 cal.	15.2	Post-fled.		Base	73	76	75	82	82	85	85	85	86	86	87	93	96	90	89	86	89	86	85	87	88	91	92	91	91	90	90	90	90	89	88	86	84	81	103.9
53	5/4	.50 cal.	15.2	Post-fled.		Cavity	74	76	73	75	77	71	80	82	82	83	85	89	95	112	97	85	92	90	99	96	94	92	91	89	90	87	88	84	84	80	80	78	75	73	113.0
53	5/4	.50 cal.	30.5	Post-fled.		Cavity	78	74	72	74	72	74	72	76	79	80	83	85	95	113	98	88	91	87	98	98	92	92	88	87	88	87	85	81	77	76	74	72	67	63	113.7
53	5/4	.50 cal.	30.5	Post-fled.		Base	69	65	68	76	75	80	82	84	86	87	88	91	92	88	87	83	76	79	81	83	87	84	85	83	83	83	80	79	79	78	77	76	73	67	99.5
53	5/4	.50 cal.	61	Post-fled.		Base	59	56	61	74	66	74	75	77	78	80	80	82	81	76	74	67	68	71	73	74	76	76	77	75	73	73	72	72	72	71	71	68	64	57	90.4
53	5/4	.50 cal.	61	Post-fled.		Cavity	72	68	67	75	69	72	72	76	77	76	79	84	93	110	96	87	86	80	90	93	86	88	83	81	86	82	77	75	69	67	66	64	58	51	110.1
53	5/4	.50 cal.	15.2	Post-fled.		Cavity	83	77	73	81	76	74	75	77	78	81	86	93	104	110	94	90	89	94	96	95	91	89	86	86	84	87	87	86	80	78	75	71	65	60	112.0
53	5/4	.50 cal.	15.2	Post-fled.		Base	81	78	74	83	81	85	85	87	87	88	92	94	93	93	85	84	82	86	88	89	90	90	90	90	89	89	87	88	87	87	87	87	86	82	103.5
53	5/4	.50 cal.	30.5	Post-fled.		Base	66	63	64	76	74	80	81	83	85	87	89	88	86	87	82	79	77	82	81	83	84	85	84	85	84	83	83	83	83	83	83	83	80	76	98.7
53	5/4	.50 cal.	30.5	Post-fled.		Base	72	70	68	71	69	74	74	74	79	81	83	88	102	109	93	87	84	87	90	93	85	85	83	82	83	84	87	85	78	76	74	69	65	59	110.2
53	5/4	.50 cal.	61	Post-fled.		Base	56	55	53	68	65	73	75	77	78	81	84	89	102	107	91	84	80	83	85	85	76	76	78	77	79	77	83	78	72	70	64	57	53	49	108.7
53	5/4	.50 cal.	61	Post-fled.		Base	61	53	56	68	65	74	76	78	79	82	83	84	81	79	73	69	66	69	72	73	74	73	73	73	73	72	73	72	71	70	70	67	63	55	91.2
53	5/5	.50 cal.	30.5	0		Base	71	66	71	80	80	84	88	90	93	95	98	99	98	94	90	88	84	83	85	87	89	91	89	89	87	85	84	83	83	83	81	79	77	71	106.0
53	5/5	.50 cal.	30.5	0		Base	60	59	64	74	73	79	82	84	87	89	92	93	92	89	84	83	79	77	78	81	82	85	83	82	81	80	78	77	77	76	75	73	70	65	100.0
53	5/10	.50 cal.	15.2	0	0.0	Base	76	68	76	85	84	85	89	90	93	94	97	98	99	95	89	94	90	85	86	87	89	90	91	93	92	92	90	89	87	86	84	82	80	75	106.7
53	5/10	.50 cal.	15.2	0	0.0	Base	77	67	76	85	84	86	89	91	93	95	97	99	99	96	89	95	90	85	87	87	90	91	91	92	93	93	90	90	88	87	85	82	80	76	107.2
53	5/10	.50 cal.	15.2	0	0.0	Base	77	68	74	85	82	88	89	91	93	95	97	100	99	96	90	96	91	86	87	87	89	90	91	91	92	91	90	90	89	87	84	83	80	76	107.4
53	5/10	.50 cal.	15.2	0	0.0	Base	80	75	73	86	83	88	89	91	93	95	97	99	99	96	89	95	91	85	87	86	89	90	91	91	91	94	91	90	89	87	85	83	80	76	107.2
53	5/12	.50 cal.	30.5	0		Base	64	59	69	72	76	76	80	82	85	86	90	90	89	89	87	80	73	75	79	83	84	83	84	84	83	79	78	78	75	74	72	69	65	60	98.3
53	5/12	.50 cal.	30.5	0		Base	64	62	73	73	78	80	82	85	88	90	93	93	92	92	91	83	76	77	81	84	86	85	83	84	84	82	79	79	77	75	73	70	66	61	101.1
53	5/12	.50 cal.	30.5	0		Base	51	59	70	70	78	79	82	85	89	90	94	94	92	92	91	83	77	78	81	84	86	85	83	84	84	80	79	78	76	74	73	70	66	60	101.6
53	5/12	.50 cal.	30.5	0		Base	66	63	76	74	81	82	84	87	91	92	95	95	94	94	93	85	78	79	82	86	88	87	84	86	86	83	81	80	78	77	75	72	68	62	103.1
53	5/12	.50 cal.	30.5	0		Base	66	67	77	75	81	83	85	88	91	93	95	96	94	94	93	86	78	80	82	86	89	88	86	87	87	83	82	81	80	78	76	73	70	64	103.7
53	5/12	.50 cal.	30.5	0		Base	67	65	75	77	82	83	86	90	92	94	97	97	96	96	95	87	79	82	85	88	91	90	87	88	87	84	84	81	81	79	77	74	71	65	105.3
57	4/21	.50 cal.	61	2	2.8	Base	46	54	57	60	64	68	70	72	75	77	78	78	75	74	76	70	66	66	68	69	68	68	70	72	71	72	70	69	69	67	66	63	60	54	86.8
57	4/21	.50 cal.	61	2	2.8	Base	48	53	56	60	63	66	69	71	73	75	77	76	74	72	74	69	65	64	65	68	65	67	67	70	70	69	67	67	65	68	64	62	57	52	85.2
57	4/21	.50 cal.	61	2	2.8	Base	48	53	56	60	63	67	69	72	74	76	77	77	74	73	76	70	66	65	66	68	67	68	69	73	70	68	67	65	65	63	62	59	56	51	85.8
57	4/21	.50 cal.	61	2	2.8	Base	47	54	57	61	64	67	70	72	74	76	77	77	74	73	75	69	65	65	66	68	68	68	68	70	70	68	68	67	67	68	66	64	61	54	86.0
57	4/21	.50 cal.	61	2	2.8	Base	32	38	48	52	63	67	70	72	74	77	78	78	74	73	75	70	65	65	66	68	67	68	70	72	70	73	70	67	68	68	65	65	61	56	86.4
57	4/21	.50 cal.	61	2	2.8	Base	54	52	64	64	69	70	73	74	75	77	78	78	75	73	74	70	65	67	69	72	71	72	72	75	72	72	72	68	68	70	67	63	60	53	87.4
57	4/21	.50 cal.	61	2	2.8	Base	54	52	64	64	70	72	75	77	79	81	83	82	79	78	80	74	70	70	72	74	74	75	75	77	76	77	75	73	74	74	71	68	64	57	91.4
57	4/21	.50 cal.	61	2	2.8	Base	49	54	65	62	70	72	75	77	79	81	82	82	79	78	80	74	69	70	71	72	73	75	75	78	77	76	75	74	74	73	70	68	65	58	91.3
57	4/21	.50 cal.	61	2	2.8	Base	42	48	53	57	67	71	73	77	79	81	82	82	78	78	79	75	69	70	70	72	72	73	75	76	75	73	73	73	74	73	72	70	67	59	90.7
57	4/21	.50 cal.	61	2	2.8	Base	52	51	64	62	70	72	75	77	79	81	82	82	79	78	79	74	70	70	71	73	74	74	75	76	75	75	76	75	74	75	70	66	63	58	91.1
57	4/21	.50 cal.	61	2	2.8	Base	48	55	64	64	69	72	75	78	79	81	82	82	79	78	80	75	70	70	71	72	73	74	76	81	77	76	74	73	73	71	70	67	63	56	91.3
57	4/21	.50 cal.	61	2	2.8	Base	54	53	65	63	70	72	75	77	80	82	82	82	79	78	80	75	70	71	72	73	75	74	75	79	76	76	72	72	71	71	68	67	63	57	91.3
57	4/21	.50 cal.	61	2	2.8	Base	44	47	55	58	68	71	73	77	79	82	82	83	79	79	80	74	70	70	72	74	75	75	76	78	77	77	75	74	73	72	70	66	64	58	91.4
57	4/26	.50 cal.	122	0		Base			51	58	63	63	66	69	70	72	73	73	71	70	71	66	60	62	63	65	63	64	64	65	64	64	62	61	59	56	52	45	38	24	81.9
57	4/26	.50 cal.	122	0		Base			42	42	46	55	57	65	68	69	71	70	69	71	71	66	60	58	57	59	59	60	60	61	60	60	59	58	56	55	51	44	39		79.5
57	4/26	.50 cal.	122	0		Base		45	49	56	60	64	66	68	70	72	73	73	71	70	71	68	60	60	61	63	64	64	64	63	63	63	61	60	58	56	52	45	38		81.7
57	4/26	.50 cal.	122	0		Base	54		56	59	59	62	66	69	70	72	74	73	71	71	71	68	62	60	62	64	64	65	65	65	64	64	62	61	59	56	52	45	40	27	82.0

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec. Time (min)	Mic Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
							Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		
57	4/26	.50 cal.	122	0		Base		45	56	55	60	63	66	68	70	73	74	73	71	71	71	66	61	61	61	63	63	64	64	64	64	63	61	60	58	56	52	45	38	24	81.8
57	4/26	.50 cal.	122	0		Base	48		55	55	62	63	66	69	70	72	74	73	72	71	72	68	62	61	62	63	65	65	65	64	65	64	62	62	59	56	52	46	39	24	82.4
57	4/26	.50 cal.	122	0		Base	48	45	52	57	61	62	67	69	70	72	73	73	71	71	72	67	61	59	61	62	63	64	64	64	65	63	62	61	59	56	53	47	40	27	81.9
57	4/30	.50 cal.	91.5	2	10.9	Base	34	48	57	57	63	68	69	73	74	75	75	74	77	78	71	71	64	60	62	66	67	69	71	73	72	71	68	67	62	59	54	50	44	43	85.9
57	4/30	.50 cal.	91.5	2	10.9	Base	37	46	48	55	61	66	68	71	73	73	73	73	76	77	71	70	63	60	61	63	64	64	67	69	68	68	67	66	62	59	54	48	44	42	84.3
57	6/2	.50 cal.	122	Post-fled.		Base	51	52	63	63	68	70	73	75	75	76	76	78	80	74	73	72	69	68	68	68	70	70	71	71	71	70	68	66	63	60	55	50	45	46	87.3
57	6/2	.50 cal.	122	Post-fled.		Cavity	65	64	63	63	68	70	72	75	76	80	85	93	95	84	79	75	73	72	68	67	70	71	78	74	68	72	67	67	69	59	50	46	44	45	98.1
57	6/2	.50 cal.	91.5	Post-fled.		Cavity	52	48	58	62	67	67	71	74	76	80	84	94	94	84	78	72	68	67	65	65	66	72	79	78	69	70	65	66	64	59	55	48	45	46	97.8
57	6/2	.50 cal.	91.5	Post-fled.		Base	52	47	59	63	67	67	71	73	74	76	75	79	80	75	75	70	67	66	66	68	69	69	69	70	70	70	68	68	66	64	61	56	51	47	87.0
57	6/2	.50 cal.	61	Post-fled.		Base	54	52	61	60	68	71	74	76	77	77	78	81	82	81	81	78	75	71	71	71	72	73	72	72	73	74	74	72	70	69	68	65	60	53	90.5
57	6/2	.50 cal.	61	Post-fled.		Base	59	58	66	67	72	74	77	79	79	80	81	84	85	84	84	81	77	74	73	73	75	76	76	76	77	77	74	74	73	72	70	67	61	56	93.4
57	6/2	.50 cal.	61	Post-fled.		Cavity	49	48	56	58	67	69	72	76	78	81	88	97	96	89	83	75	73	71	71	71	73	77	84	80	72	72	68	68	67	64	61	54	55	50	100.7
57	6/2	.50 cal.	61	Post-fled.		Cavity	58	55	66	67	71	73	77	79	81	84	91	101	100	91	86	79	77	75	74	73	75	77	85	83	76	77	70	70	70	67	62	55	54	52	104.1
57	6/2	.50 cal.	30.5	Post-fled.		Cavity	73	69	79	80	82	83	85	86	86	90	96	109	112	98	95	90	95	92	88	83	83	85	88	87	82	78	79	76	77	73	69	66	66	59	114.0
57	6/2	.50 cal.	30.5	Post-fled.		Base	70	68	78	78	81	83	85	87	88	89	91	95	97	95	98	96	88	89	87	86	86	86	88	88	88	90	88	90	90	88	87	85	83	77	105.4
57	6/2	.50 cal.	15.2	Post-fled.		Base	76	74	82	81	85	84	86	86	86	85	85	92	96	92	94	93	87	90	87	86	84	84	87	87	88	91	91	90	90	92	93	93	93	90	105.0
57	6/2	.50 cal.	15.2	Post-fled.		Base	80	72	81	84	85	85	87	87	86	86	87	93	96	93	95	94	89	91	88	87	85	84	88	87	88	90	91	92	92	93	93	94	93	90	105.7
57	6/2	.50 cal.	15.2	Post-fled.		Cavity	79	79	84	82	88	88	87	86	85	85	94	108	106	94	89	87	96	91	88	88	86	84	84	82	79	77	75	72	70	69	65	63	62	61	111.1
57	6/2	.50 cal.	15.2	Post-fled.		Cavity	81	73	80	82	77	78	82	82	83	85	90	108	110	95	91	87	98	93	88	90	86	84	87	86	84	81	79	77	76	72	68	67	64	63	112.8
57	6/2	.50 cal.	122	Post-fled.		Cavity	52	53	60	57	65	67	69	72	75	76	79	82	89	91	83	76	72	69	71	75	58	55	55	70	67	63	63	55	54	48	42	39	40	42	94.4
57	6/2	.50 cal.	122	Post-fled.		Cavity	48	52	61	57	65	67	69	72	74	76	79	82	90	92	84	77	72	70	70	74	59	56	55	69	66	64	66	59	56	48	43	40	40	42	95.1
57	6/2	.50 cal.	122	Post-fled.		Base	46	49	61	58	66	67	70	73	74	74	76	74	72	75	74	65	64	63	68	69	68	69	70	69	69	68	66	65	63	60	55	49	44	43	84.9
57	6/2	.50 cal.	122	Post-fled.		Base	46	48	60	58	65	67	70	73	74	74	76	74	72	75	74	66	63	63	67	69	69	68	70	69	69	67	66	64	62	60	55	49	43	43	84.8
57	6/2	.50 cal.	91.5	Post-fled.		Base	56	54	54	53	51	50	49	48	47	47	46	46	43	43	42	41	40	39	39	37	37	36	34	34	33	31	34	34	33	40	37	38	40	41	62.7
57	6/2	.50 cal.	91.5	Post-fled.		Base	50	46	63	59	68	70	71	73	75	77	79	76	77	79	75	69	67	66	70	71	69	70	70	71	71	70	68	67	65	63	60	56	50	47	87.2
57	6/2	.50 cal.	91.5	Post-fled.		Base	51	52	62	61	68	69	72	73	75	78	78	76	76	79	76	69	68	67	70	71	69	70	71	70	71	70	69	67	65	63	60	55	50	47	87.2
57	6/2	.50 cal.	91.5	Post-fled.		Cavity	53	54	62	58	67	69	71	73	76	80	82	84	94	95	85	79	74	73	73	79	60	60	59	73	69	67	66	59	57	53	48	44	44	45	98.6
57	6/2	.50 cal.	91.5	Post-fled.		Cavity	51	48	62	60	67	69	72	73	76	80	82	85	94	95	84	79	75	73	75	80	62	62	59	76	71	66	67	59	58	52	47	43	44	45	98.5
57	6/2	.50 cal.	61	Post-fled.		Cavity	50	50	66	62	71	73	75	78	81	83	85	90	97	101	91	84	80	74	80	84	68	67	65	79	79	76	77	68	69	63	59	56	54	50	103.7
57	6/2	.50 cal.	61	Post-fled.		Cavity	52	54	65	64	71	74	76	79	81	84	86	91	98	102	91	84	81	75	80	85	68	67	66	82	78	74	74	68	68	63	58	54	54	52	104.5
57	6/2	.50 cal.	61	Post-fled.		Base	54	52	67	62	72	74	76	79	81	82	83	82	82	86	86	76	74	70	72	74	75	75	75	75	78	78	75	76	75	74	72	69	66	59	93.5
57	6/2	.50 cal.	61	Post-fled.		Base	57	55	67	65	72	75	77	79	81	82	84	83	82	87	86	77	74	71	72	74	75	75	76	78	79	78	76	77	77	76	74	71	67	59	94.3
57	6/2	.50 cal.	30.5	Post-fled.		Base	62	57	73	69	78	79	80	83	85	86	89	87	87	92	94	88	85	80	80	81	81	84	85	85	85	85	86	86	86	85	84	82	80	74	100.9
57	6/2	.50 cal.	30.5	Post-fled.		Base	62	59	74	68	78	79	81	83	85	85	88	87	87	92	95	88	85	80	79	81	82	83	84	84	84	85	85	85	85	83	83	81	79	74	100.7
57	6/2	.50 cal.	30.5	Post-fled.		Cavity	65	61	72	68	78	79	80	83	85	85	88	91	104	106	93	88	87	88	89	92	81	83	78	83	80	77	76	70	70	66	63	60	57	52	108.6
57	6/2	.50 cal.	30.5	Post-fled.		Cavity	63	64	73	69	78	79	81	83	84	85	87	92	104	106	94	89	87	89	90	91	81	83	78	83	79	76	74	71	71	67	63	60	58	54	108.7
57	6/2	.50 cal.	15.2	Post-fled.		Cavity	55	64	68	69	72	72	71	72	75	74	80	82	96	100	88	80	77	84	83	84	78	77	75	76	72	71	69	65	65	61	58	57	57	57	102.0
57	6/2	.50 cal.	15.2	Post-fled.		Cavity	64	68	79	73	79	80	78	79	82	81	87	89	102	107	95	87	85	91	90	90	85	84	83	83	82	78	76	73	73	69	65	63	62	61	109.1
57	6/2	.50 cal.	15.2	Post-fled.		Cavity	62	68	81	74	82	81	78	80	83	82	88	90	104	108	96	88	86	93	91	90	86	85	83	85	83	80	78	73	73	70	67	64	63	61	110.1
57	6/2	.50 cal.	15.2	Post-fled.		Base	52	67	69	71	73	74	75	77	78	78	80	76	77	86	88	83	84	83	77	77	77	78	76	80	78	83	81	80	82	80	81	79	78	74	95.5
57	6/2	.50 cal.	15.2	Post-fled.		Base	67	71	80	75	81	81	82	84	85	85	88	83	84	93	95	90	90	89	83	85	84	87	86	88	89	89	89	89	88	89	89	89	89	85	102.9
57	6/2	.50 cal.	15.2	Post-fled.		Base	65	69	81	75	82	82	83	85	86	87	89	85	85	94	97	91	91	90	83	85	84	86	86	87	88	89	88	88	89	90	91	89	89	84	103.7
61	5/17	.50 cal.	30.5	0		Base	60		67	66	70	75	77	79	80	81	82	84	88	88	85	78	75	75	78	80	82	86	87	87	84	83	81	79	78	75	73	70	67	61	96.9
61	5/17	.50 cal.	30.5	0		Base			67	66	71	72	75	77	79	80	82	83	85	85	83	75	72	74	77	78	80	82	83	82	82	81	78	76	76	73	71	68	64	58	94.3
61	5/17	.50 cal.	30.5	0		Base		61	68	70	75	77	80	82	83	84	85	87	90	90	87	80	76	76	79	81	83	85	87	88	84	84	81	78	79	76	74	71	67	62	98.4
61	5/17	.50 cal.	30.5	0		Base	60	58	66	67	73	76	79	80	83	84	85	87	89	89	86	78	75	75	77	79	82	84	86	85	82	83	81	78	78	75	73	71	68	63	97.5

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
61	5/17	.50 cal.	30.5	0		Base	64		69	69	74	76	79	81	83	84	85	86	89	89	87	79	75	74	77	80	83	83	86	85	81	82	79	78	77	75	73	70	66	60	97.3
61	5/17	.50 cal.	30.5	0		Base			68	64	74	76	79	82	84	86	86	87	91	90	87	80	76	76	78	80	83	85	88	87	84	85	82	80	79	76	75	71	68	62	98.7
61	5/17	.50 cal.	30.5	0		Base	68	63	71	70	76	76	80	81	84	85	85	87	89	88	87	79	77	75	78	81	83	86	86	85	83	84	82	78	78	76	74	71	67	62	97.9
61	5/17	.50 cal.	30.5	0		Base	60	54	71	72	76	78	81	82	84	85	86	88	91	90	87	81	78	77	79	82	85	87	88	87	84	84	82	81	80	78	76	72	69	63	99.2
61	5/17	.50 cal.	30.5	0		Base		66	70	73	75	76	79	82	83	84	85	87	89	89	86	77	74	75	77	80	83	85	85	84	82	82	81	79	78	74	72	69	66	59	97.6
61	5/17	.50 cal.	30.5	0		Base		63	69	65	71	73	74	77	79	81	81	82	85	85	82	76	71	70	73	76	79	80	80	80	79	81	77	73	75	70	69	66	62	57	93.5
61	5/21	.50 cal.	15.2	0		Base	86	79	80	87	83	87	89	89	90	92	93	91	94	101	98	94	88	91	88	90	91	93	92	92	93	92	91	91	91	91	90	89	88	84	107.3
61	5/21	.50 cal.	15.2	0		Base	77	69	76	86	81	88	89	89	90	91	93	91	94	101	99	93	89	90	87	89	89	92	92	92	93	91	91	90	91	90	90	89	88	84	107.1
61	5/21	.50 cal.	15.2	0		Base	80	74	78	85	83	87	88	89	88	90	92	90	92	99	97	93	88	90	87	88	88	90	90	91	91	91	90	89	89	89	88	88	86	82	105.9
61	5/21	.50 cal.	15.2	0		Base	83	77	76	86	81	86	87	87	88	90	90	89	92	99	96	91	86	89	86	88	88	89	91	91	91	90	89	89	89	89	88	88	86	83	105.2
61	6/15	.50 cal.	30.5	0		Base	62	66	78	74	83	85	87	90	92	94	94	97	98	98	96	90	83	85	89	93	89	90	92	93	92	89	90	88	87	87	86	85	83	78	106.5
61	6/15	.50 cal.	30.5	0		Base	64	64	75	73	80	82	84	87	89	91	91	93	94	95	93	87	80	82	86	90	87	86	88	89	88	86	85	84	84	83	83	82	79	74	103.3
88	5/26	.50 cal.	30.5	2	14.6	Base	63	56	70	74	78	79	83	85	87	89	89	89	91	94	89	89	82	79	80	80	79	80	80	79	79	80	80	79	79	78	76	74	71	66	100.0
88	5/26	.50 cal.	30.5	2	14.6	Base		64	68	68	77	79	81	85	87	89	89	89	91	93	89	89	82	79	80	80	79	80	80	79	80	80	79	78	78	77	76	74	72	66	99.7
88	5/26	.50 cal.	30.5	2	14.6	Base	73	64	70	76	80	81	84	86	88	90	90	89	92	94	89	90	83	81	80	80	80	80	80	79	80	80	79	78	78	77	76	74	71	65	100.7
88	5/26	.50 cal.	30.5	2	14.6	Base	59	63	72	72	77	80	82	85	87	89	89	89	91	93	89	89	82	80	79	80	78	80	79	79	79	79	78	77	78	76	75	74	70	65	99.8
88	5/26	.50 cal.	30.5	2	14.6	Base	59	59	71	76	76	82	85	87	89	91	90	90	92	94	90	91	85	81	80	80	79	80	81	82	83	83	81	80	79	78	78	76	73	67	101.2
120	5/13	.50 cal.	30.5	2	5.9	Base	59	72	79	80	81	85	87	89	90	92	96	97	95	91	90	89	81	85	87	87	87	87	87	87	87	88	86	85	85	84	84	80	77	71	104.1
120	5/13	.50 cal.	30.5	2	5.9	Base	68	73	80	76	84	86	87	89	90	92	97	98	96	91	91	91	83	86	88	89	89	88	89	89	89	88	87	86	86	85	84	81	78	72	105.1
120	5/13	.50 cal.	30.5	2	5.9	Base	73	74	77	78	80	83	85	87	87	91	95	96	94	90	90	89	81	85	86	87	87	87	87	87	87	87	85	85	84	84	83	79	76	70	103.2
125	5/13	.50 cal.	15.2	Inactive		Cavity	75	71	67	77	75	79	82	79	78	83	86	96	99	85	87	86	89	85	86	87	85	83	82	84	80	84	83	81	82	82	83	68	67	65	102.6
125	5/13	.50 cal.	15.2	Inactive		Cavity	80	71	75	80	77	80	81	83	81	84	89	98	99	85	88	87	90	86	88	89	87	85	83	86	82	85	84	83	83	83	84	71	69	68	104.0
125	5/13	.50 cal.	15.2	Inactive		Base	75	62	67	75	71	75	75	75	79	83	82	84	88	84	83	81	77	78	80	81	80	79	79	79	80	81	80	78	77	77	75	72	69	66	95.1
125	5/13	.50 cal.	15.2	Inactive		Base	77	65	68	77	72	77	78	78	81	85	85	86	89	86	84	83	79	79	80	81	81	80	81	81	80	81	80	79	78	78	76	73	70	67	96.7
125	5/13	.50 cal.	30.5	Inactive		Cavity	90	80	79	81	75	81	81	77	79	81	85	93	94	89	87	88	86	87	89	90	87	83	83	84	82	82	81	80	80	80	81	71	70	69	101.3
125	5/13	.50 cal.	30.5	Inactive		Base	75	67	72	78	76	79	80	79	79	85	84	84	87	85	81	84	82	83	83	82	82	83	84	84	84	84	82	81	80	79	78	75	72	70	97.2
125	5/13	.50 cal.	61	Inactive		Cavity	81	76	72	78	76	77	74	74	74	77	81	89	92	82	80	81	83	83	83	84	81	78	77	78	77	78	76	75	75	75	76	66	65	64	96.9
125	5/13	.50 cal.	61	Inactive		Base	73	67	60	65	61	64	73	78	77	81	88	86	77	76	74	76	75	76	75	78	79	80	81	81	80	80	78	76	75	73	72	63	58	53	93.8
125	5/13	.50 cal.	15.2	Inactive		Cavity	81	78	78	83	79	80	83	82	85	85	89	92	96	107	92	91	89	91	96	91	91	91	87	90	87	90	89	88	88	88	89	73	71	70	108.9
125	5/13	.50 cal.	15.2	Inactive		Base	79	72	74	78	75	77	79	78	81	81	85	87	88	91	89	88	83	81	83	85	85	87	88	88	86	87	87	86	86	85	84	83	81	78	100.4
125	5/13	.50 cal.	30.5	Inactive		Base	72	68	70	76	76	78	78	79	80	80	80	78	80	83	79	73	76	76	75	78	78	80	79	79	79	80	80	79	77	76	74	72	70	68	93.1
125	5/13	.50 cal.	30.5	Inactive		Cavity	71	68	69	76	75	78	77	79	79	79	79	77	80	82	78	74	77	76	75	78	78	80	79	79	79	80	80	79	77	76	74	72	70	68	92.8
125	5/13	.50 cal.	61	Inactive		Cavity	82	76	71	72	70	74	71	72	72	73	76	78	83	93	84	79	83	80	83	82	81	80	78	79	76	77	77	76	76	75	77	66	65	64	96.4
125	5/13	.50 cal.	61	Inactive		Base	69	66	67	73	72	75	77	76	79	74	78	78	78	76	73	76	76	76	75	77	78	77	77	77	77	76	74	73	71	70	68	63	61	58	90.5
127	6/3	.50 cal.	61	Post-fled.		Cavity			61	60	67	73	76	78	79	82	86	92	101	83	74	71	71	75	82	92	87	82	74	86	89	79	79	73	73	64	60	55	51	44	102.5
127	6/3	.50 cal.	61	Post-fled.		Cavity	63		68	64	71	74	77	79	80	84	87	93	103	85	76	72	72	76	82	94	88	83	75	87	89	80	80	74	75	66	64	58	54	48	104.5
127	6/3	.50 cal.	61	Post-fled.		Base			68	65	62	68	73	74	76	80	82	81	77	70	63	64	62	69	71	71	71	73	73	72	71	69	66	65	60	58	52		42		88.3
127	6/3	.50 cal.	61	Post-fled.		Base	64		68	66	69	73	76	77	79	83	84	83	79	72	66	67	65	72	74	74	75	76	76	75	74	72	70	67	64	62	57	41	45		90.9
127	6/3	.50 cal.	30.5	Post-fled.		Base	68		65	53	58	66	71	70	73	77	82	81	81	79	75	74	70	68	70	69	70	72	72	71	71	72	71	68	66	65	61	56	54	48	88.9
127	6/3	.50 cal.	30.5	Post-fled.		Base			61	66	66	71	72	71	74	78	83	82	82	81	75	74	71	68	70	70	72	74	74	76	75	74	71	71	70	68	64	59	56	52	90.3
127	6/3	.50 cal.	30.5	Post-fled.		Cavity	66		68	69	66	69	68	69	72	74	79	88	102	86	76	77	78	84	76	83	80	76	73	77	78	75	73	70	69	63	59	53	51	46	102.4
127	6/3	.50 cal.	30.5	Post-fled.		Cavity	64	58	66	69	57	68	69	68	72	76	81	88	103	87	77	78	79	85	76	83	81	77	74	78	80	76	74	72	69	64	62	57	53	47	103.1
127	6/3	.50 cal.	15.2	Post-fled.		Cavity	72		78	78	74	79	76	76	83	82	87	99	113	94	87	88	94	100	90	97	93	90	90	88	90	86	85	82	81	78	76	74	69	67	114.0
127	6/3	.50 cal.	15.2	Post-fled.		Cavity	70		77	77	76	81	77	78	83	82	89	100	113	95	88	88	93	100	90	97	94	90	90	88	91	87	87	82	80	79	79	74	72	67	113.8
127	6/3	.50 cal.	15.2	Post-fled.		Base	72		76	78	79	81	79	81	85	85	89	90	92	91	91	92	90	88	87	89	89	92	93	91	90	88	87	87	87	86	84	83	80	75	103.3
127	6/3	.50 cal.	15.2	Post-fled.		Base	67		79	80	79	79	81	81	83	85	89	90	92	91	92	91	90	88	87	90	88	90	93	91	90	87	88	88	86	85	84	83	80	76	103.1

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec. Time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
129	5/17	.50 cal.	30.5	2	3.0	Base	79	74	76	84	84	86	89	92	94	96	97	96	94	100	101	95	97	94	89	89	91	89	92	92	92	92	90	88	86	83	81	78	75	69	108.2
129	5/19	.50 cal.	61	2	2.6	Base			61	68	70	73	77	79	81	84	85	84	83	85	86	80	75	71	70	71	72	73	75	77	76	77	72	70	68	65	61	48	48		93.9
129	5/19	.50 cal.	61	2	2.6	Base			68	69	72	74	78	80	83	85	86	85	85	87	88	81	75	72	72	72	74	75	76	78	80	78	73	73	69	68	63	53	50	37	95.3
129	5/19	.50 cal.	61	2	2.6	Base	67		64	72	65	75	77	80	82	86	87	85	85	86	87	81	75	72	72	74	74	75	76	77	79	77	73	71	68	66	62	47	49		95.2
129	5/19	.50 cal.	61	2	2.6	Base	66	68	66	76	73	80	82	84	86	89	90	89	88	90	91	85	79	76	76	76	77	78	79	81	82	83	78	75	73	70	66	54	51	37	98.8
129	5/24	.50 cal.	91.5	2	1.8	Base	62	52	71	70	76	78	80	82	85	86	86	88	86	80	78	75	75	74	76	78	77	77	77	76	76	75	73	72	70	68	64	51	48	33	95.0
133	4/21	.50 cal.	61	0		Base	53	64	65	67	70	74	76	79	81	83	85	86	84	81	72	67	68	72	73	75	74	74	75	75	76	75	73	72	70	68	65	60	55	45	92.8
133	4/21	.50 cal.	61	0		Base	58	63	63	67	72	75	76	80	81	83	85	87	85	81	72	67	68	72	73	75	74	74	76	75	76	75	73	71	70	68	65	60	54	43	93.3
133	4/21	.50 cal.	61	0		Base	60	63	68	67	72	76	78	80	82	83	85	87	86	82	73	67	67	72	74	75	74	75	76	75	75	75	73	72	70	68	65	61	55	44	93.7
133	4/21	.50 cal.	61	0		Base	57	65	68	67	73	76	78	81	82	84	86	88	86	82	73	67	68	72	74	75	75	76	77	76	77	76	74	72	70	69	66	62	57	46	94.3
133	4/26	.50 cal.	122	1		Base	38	51	60	59	66	68	71	74	75	75	73	75	77	70	59	60	60	63	67	68	68	69	69	69	68	68	67	65	64	61	58	53	46	43	84.8
133	4/26	.50 cal.	122	1		Base	40	49	61	60	66	69	71	75	75	75	73	76	77	70	59	60	61	65	68	70	69	70	70	69	68	68	67	65	64	61	58	53	46	43	85.1
133	4/26	.50 cal.	122	1		Base	46	55	59	61	66	68	71	73	75	75	73	75	77	70	60	59	59	63	68	69	68	69	69	69	68	68	66	64	63	60	58	52	46	43	84.6
133	4/26	.50 cal.	122	1		Base	49	51	58	61	66	67	71	73	75	74	73	75	76	70	59	60	61	64	68	69	68	69	69	69	68	67	66	64	63	61	58	52	46	41	84.4
133	4/26	.50 cal.	122	1		Base	38	47	50	55	58	61	64	66	68	67	66	68	70	63	52	53	53	57	61	61	61	61	63	61	60	60	59	57	55	53	50	45	40	39	77.5
133	4/29	.50 cal.	91.5	0	0.0	Base	56	60	56	65	70	71	73	76	78	80	79	75	80	75	69	62	64	67	71	71	70	72	72	72	72	70	68	66	64	60	55	50	45	42	88.0
133	4/29	.50 cal.	91.5	0	0.0	Base	56	56	54	67	66	71	73	75	77	79	78	75	78	74	68	61	63	65	69	71	70	71	71	71	70	69	67	65	63	60	55	49	44	41	87.0
133	4/29	.50 cal.	91.5	0	0.0	Base	54	61	55	63	67	69	71	74	76	78	77	74	78	74	67	61	61	64	67	70	70	70	71	70	69	67	66	64	62	58	54	48	44	40	86.2
133	4/29	.50 cal.	91.5	0	0.0	Base	57	57	56	66	67	71	72	75	78	79	78	75	79	74	69	62	62	65	69	70	70	71	71	71	70	69	67	65	62	59	54	49	44	40	87.0
133	4/29	.50 cal.	91.5	0	0.0	Base	49	61	56	60	68	69	73	74	77	79	77	74	77	74	68	61	59	62	67	68	68	69	69	69	69	67	65	64	61	58	54	47	44	40	86.0
133	6/2	.50 cal.	15.2	Post-fled.		Base	75	76	81	83	85	84	84	85	89	93	92	88	91	96	96	93	87	89	89	91	92	91	91	89	90	93	92	91	90	88	87	85	81	78	105.3
133	6/2	.50 cal.	15.2	Post-fled.		Cavity	77	76	74	74	79	77	75	81	84	89	95	113	103	89	89	87	100	89	93	97	93	89	89	88	90	88	83	80	79	78	74	73	68	66	114.2
133	6/2	.50 cal.	30.5	Post-fled.		Cavity	69	71	79	76	78	79	80	80	84	90	97	113	104	93	89	88	96	89	88	94	93	86	86	89	92	88	84	82	77	76	73	70	66	65	113.7
133	6/2	.50 cal.	30.5	Post-fled.		Base	61	68	73	73	77	80	82	84	87	89	89	88	90	95	95	90	86	82	85	83	85	86	86	86	86	87	87	87	87	86	85	83	78	73	102.4
133	6/2	.50 cal.	61	Post-fled.		Base	55	56	68	62	71	74	76	79	82	83	84	83	85	86	83	76	73	73	75	75	76	77	76	77	76	76	74	72	70	67	64	61	61	62	93.8
133	6/2	.50 cal.	61	Post-fled.		Cavity	55	57	67	61	70	74	75	79	82	86	94	109	100	92	86	80	75	78	82	93	90	78	78	89	94	87	80	81	77	71	69	65	64	63	110.3
133	6/2	.50 cal.	91.5	Post-fled.		Cavity	50	55	62	61	68	71	73	76	79	83	91	101	95	83	79	75	75	76	81	89	86	77	69	82	87	82	77	73	69	64	60	56	53	53	102.9
133	6/2	.50 cal.	91.5	Post-fled.		Base	50	55	65	63	69	72	73	76	78	80	81	77	78	77	75	68	69	73	75	73	74	75	75	74	74	73	71	69	66	62	58	54	52	54	89.3
133	6/2	.50 cal.	122	Post-fled.		Base	49	49	52	55	58	62	64	67	69	71	70	68	65	66	63	56	57	59	60	60	61	61	63	62	61	60	58	55	52	48	43	40	41	42	78.5
133	6/2	.50 cal.	122	Post-fled.		Base	41	45	50	53	56	60	62	64	65	66	58	58	56	58	54	52	55	59	60	60	61	61	62	61	60	58	55	51	48	44	40	39	40	42	74.1
133	6/2	.50 cal.	122	Post-fled.		Base	45	46	51	53	56	60	62	64	67	68	68	66	63	65	63	56	58	60	60	61	62	62	63	62	61	60	58	55	52	48	44	42	43	45	77.0
133	6/2	.50 cal.	122	Post-fled.		Base	43	48	50	53	57	60	62	64	67	68	68	66	63	65	63	55	56	58	60	60	60	62	62	62	61	60	57	54	52	48	43	40	40	42	76.7
133	6/2	.50 cal.	122	Post-fled.		Base	39	46	48	52	55	58	61	63	65	67	67	65	62	64	61	55	56	59	60	60	60	63	61	61	61	60	57	54	51	47	43	40	40	42	76.0
133	6/2	.50 cal.	122	Post-fled.		Base	44	48	49	53	55	59	61	64	66	68	67	65	62	64	61	54	56	58	60	61	61	62	62	62	61	60	57	54	52	48	43	40	41	42	76.2
133	6/2	.50 cal.	122	Post-fled.		Base	42	53	55	60	60	65	67	70	72	73	73	70	68	70	67	58	61	63	64	64	65	67	67	66	65	64	62	59	57	53	47	42	41	42	81.6
133	6/2	.50 cal.	122	Post-fled.		Cavity	53	51	49	52	55	59	61	63	65	70	77	92	81	71	68	68	71	65	66	73	70	67	63	69	71	70	68	67	67	67	68	59	54	48	92.5
133	6/2	.50 cal.	122	Post-fled.		Cavity	56	56	59	56	60	60	60	63	66	70	77	90	80	67	65	65	67	70	69	74	69	63	66	69	71	71	67	71	66	63	66	62	57	58	91.2
133	6/2	.50 cal.	122	Post-fled.		Cavity	59	60	61	61	63	64	64	66	67	70	77	90	80	67	63	62	66	67	65	73	69	66	70	71	71	71	68	71	64	65	68	62	59	59	91.2
133	6/2	.50 cal.	122	Post-fled.		Cavity	56	54	59	61	62	62	63	65	67	70	77	90	79	67	62	62	66	68	67	73	68	65	65	72	72	72	67	70	66	64	64	60	58	59	90.8
133	6/2	.50 cal.	122	Post-fled.		Cavity	58	59	58	60	59	59	61	63	65	69	77	90	80	67	63	64	67	68	68	72	69	65	71	73	72	71	70	72	69	68	69	60	62	58	91.1
133	6/2	.50 cal.	122	Post-fled.		Cavity	46	61	61	64	63	66	67	68	71	75	81	96	85	73	69	67	74	71	71	78	75	69	74	75	78	75	73	74	72	71	71	67	65	65	96.9
133	6/2	.50 cal.	122	Post-fled.		Cavity	67	65	69	69	71	72	72	73	75	77	79	80	84	99	96	83	80	81	85	85	82	79	77	77	78	78	77	76	77	76	78	64	64	62	101.9
133	6/2	.50 cal.	122	Post-fled.		Cavity	58	64	59	66	65	69	71	73	75	77	80	81	84	99	96	80	79	80	84	83	80	79	78	77	78	78	78	77	77	76	78	64	63	63	101.1
133	6/2	.50 cal.	122	Post-fled.		Base	52	55	62	61	68	70	72	75	76	79	79	76	79	75	70	66	64	70	72	73	72	73	72	72	71	70	67	65	62	58	53	47	47	49	87.5
133	6/2	.50 cal.	122	Post-fled.		Base	46	54	61	60	66	69	71	74	75	78	78	76	78	75	69	67	63	67	70	71	71	72	71	70	70	69	67	64	61	58	52	46	45	47	86.7
133	6/2	.50 cal.	91.5	Post-fled.		Base	60	54	67	67	73	74	77	79	80	83	82	82	86	83	76	77	74	73	74	75	74	75	76	75	75	74	72	69	68	64	60	55	53	55	92.5

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
133	6/2	.50 cal.	91.5	Post-fled.		Base	63	60	69	66	73	75	77	79	81	83	83	83	86	84	79	79	77	75	74	75	75	76	76	76	75	75	73	70	68	65	60	56	55	57	93.4
133	6/2	.50 cal.	91.5	Post-fled.		Cavity	73	67	71	71	71	72	75	78	79	82	84	87	94	109	105	91	88	87	85	88	85	81	80	81	82	82	82	81	82	81	82	56	55	57	110.9
133	6/2	.50 cal.	91.5	Post-fled.		Cavity	72	71	73	72	75	77	80	81	82	84	86	87	93	110	106	91	90	88	89	90	88	86	84	85	86	86	86	85	85	85	86	55	55	57	112.2
139	5/4	.50 cal.	61	2		Base	64		64	70	68	73	76	78	80	82	84	85	86	83	78	72	74	74	73	72	74	73	73	74	75	75	74	73	72	71	68	64	57	43	93.0
139	5/4	.50 cal.	61	2		Base		60	63	68	69	73	76	79	80	82	84	85	85	82	77	71	74	73	74	73	74	73	73	74	76	75	74	74	73	71	69	65	57	44	93.0
139	5/4	.50 cal.	61	2		Base		53	64	67	72	72	76	79	79	82	84	86	85	82	77	71	74	75	73	72	74	73	73	73	75	75	74	74	73	72	69	64	57	40	92.9
139	5/4	.50 cal.	61	2		Base	60		65	68	71	74	77	79	81	83	85	86	86	83	78	71	75	75	74	74	75	75	73	75	76	76	75	75	74	72	69	64	58	43	93.7
139	5/4	.50 cal.	61	2		Base	57	49	59	69	69	73	76	79	80	82	84	85	86	83	78	71	74	74	73	72	74	73	73	74	75	75	74	73	72	71	68	64	57	51	92.9
139	5/4	.50 cal.	61	2		Base	58	51	62	68	70	73	76	79	80	82	84	86	85	82	77	72	74	74	74	73	74	74	73	75	76	75	74	74	73	71	69	65	58	51	93.0
139	5/4	.50 cal.	61	2		Base	57	51	63	67	72	72	76	79	79	82	84	86	85	83	77	71	74	75	73	72	74	73	73	73	75	75	74	74	73	72	69	64	58	51	92.9
139	5/4	.50 cal.	61	2		Base	51	49	59	68	70	73	77	79	80	83	85	86	86	83	78	71	74	74	74	73	74	74	73	74	76	75	75	75	74	72	69	65	58	50	93.6
139	5/9	.50 cal.	91.5	2	5.2	Base	56	48	55	68	63	71	73	75	77	78	80	81	80	79	77	72	70	70	70	71	71	71	72	72	72	72	70	68	65	62	56	49	43	40	89.0
139	5/9	.50 cal.	91.5	2	5.2	Base	49		58	65	67	68	73	75	77	79	80	82	81	80	78	74	72	72	72	72	71	71	72	71	71	72	70	67	65	60	55	48	43	41	89.7
139	5/9	.50 cal.	91.5	2	5.2	Base	43	50	59	66	65	71	73	76	78	79	81	82	82	81	79	74	72	71	71	72	71	72	72	73	73	73	71	68	66	62	57	50	44	41	90.4
139	5/9	.50 cal.	91.5	2	5.2	Base	52	50	58	68	67	72	74	76	79	80	82	83	83	81	79	75	73	72	72	72	71	72	73	73	74	74	71	69	66	62	57	50	44	42	91.0
139	6/14	.50 cal.	15.2	Post-fled.		Cavity	85	80	72	80	76	83	83	85	84	89	94	111	102	91	90	87	96	90	92	99	98	93	88	91	90	88	83	82	79	76	72	68	65	63	112.3
139	6/14	.50 cal.	15.2	Post-fled.		Base	80	76	75	84	81	85	86	86	88	89	87	86	91	98	94	95	92	88	88	88	89	92	93	93	93	92	91	90	92	91	93	93	93	90	106.2
139	6/14	.50 cal.	30.5	Post-fled.		Base	73	70	66	78	77	82	82	84	86	88	89	90	92	96	91	87	83	87	89	90	89	90	90	87	88	88	89	87	88	88	87	85	83	78	103.4
139	6/14	.50 cal.	30.5	Post-fled.		Cavity	82	80	73	81	78	78	76	79	85	90	96	111	104	90	87	88	95	91	89	99	98	91	87	90	89	85	80	79	75	72	69	65	62	58	112.5
139	6/14	.50 cal.	61	Post-fled.		Cavity	63	63	62	69	68	75	76	78	80	85	92	104	98	89	81	78	76	79	79	86	91	82	79	84	87	76	72	71	66	62	59	54	50	47	106.0
139	6/14	.50 cal.	61	Post-fled.		Base	59	59	57	70	68	75	76	79	79	81	82	82	84	85	75	76	73	73	74	75	76	77	77	78	78	77	75	74	74	73	71	69	65	57	92.7
139	6/14	.50 cal.	91.5	Post-fled.		Base	56	56	53	65	65	70	70	73	74	75	77	76	77	76	68	68	66	67	69	70	70	71	72	72	71	70	69	67	66	64	62	57	51	46	86.3
139	6/14	.50 cal.	91.5	Post-fled.		Cavity	55	55	52	65	65	70	69	73	76	79	86	98	92	82	77	73	70	70	72	82	83	75	73	80	82	71	68	56	60	55	53	48	45	44	99.7
139	6/14	.50 cal.	122	Post-fled.		Cavity	51	52	49	64	61	69	69	72	73	77	84	97	90	76	74	73	67	66	70	82	81	74	68	74	74	63	58	48	49	44	40	38	39	40	98.5
139	6/14	.50 cal.	122	Post-fled.		Base	53	53	51	64	62	69	69	72	72	72	75	75	73	68	66	66	62	63	67	68	68	68	68	69	68	66	66	64	63	60	56	50	43	40	83.6
139	6/14	.50 cal.	15.2	Post-fled.		Base	85	82	77	88	84	89	89	91	91	94	94	95	89	94	97	94	92	93	90	92	91	92	94	97	95	93	92	91	90	90	89	88	86	82	107.2
139	6/14	.50 cal.	15.2	Post-fled.		Cavity	84	84	78	84	79	83	85	83	82	87	88	88	94	99	116	113	99	96	94	104	98	96	99	95	91	90	89	84	84	83	80	79	77	74	118.2
139	6/14	.50 cal.	30.5	Post-fled.		Cavity	83	82	72	82	80	81	78	84	84	82	87	89	92	97	113	111	96	94	95	104	101	96	93	92	88	85	82	78	76	74	70	66	63	59	116.0
139	6/14	.50 cal.	30.5	Post-fled.		Base	70	70	65	78	77	82	82	87	89	89	92	92	90	91	93	91	82	84	88	88	88	91	88	88	91	91	87	85	87	88	87	87	85	81	103.4
139	6/14	.50 cal.	61	Post-fled.		Base	62	60	57	71	69	76	77	79	82	84	85	85	82	83	82	75	71	72	76	77	77	78	79	78	78	77	78	77	77	76	74	70	66	58	94.0
139	6/14	.50 cal.	61	Post-fled.		Base	65	63	61	72	69	76	77	78	79	81	82	85	86	94	107	104	91	86	87	95	93	87	85	82	78	75	70	69	66	64	60	57	53	50	109.3
139	6/14	.50 cal.	91.5	Post-fled.		Cavity	66	70	71	74	73	77	76	76	77	79	81	83	86	92	102	97	88	85	84	90	90	81	77	75	69	63	59	59	55	51	49	47	47	47	104.2
139	6/14	.50 cal.	91.5	Post-fled.		Base	58	54	55	66	64	70	71	74	76	77	78	77	74	73	70	67	65	70	72	75	73	72	72	72	72	71	72	70	67	64	62	58	53	48	87.1
139	6/14	.50 cal.	122	Post-fled.		Base	57	53	54	65	64	70	71	74	76	78	78	78	73	70	71	64	59	64	67	69	69	69	68	68	69	67	66	64	61	59	55	49	44	43	85.9
139	6/14	.50 cal.	122	Post-fled.		Cavity	52	59	58	64	64	69	71	72	74	76	78	82	84	89	102	99	84	82	82	87	84	79	75	70	67	63	58	56	52	50	47	45	44	44	104.2
139	6/17	.50 cal.	30.5	Post-fled.		Base	67	68	77	72	79	80	82	84	85	89	90	90	91	97	92	90	88	89	87	90	88	90	90	88	88	90	90	89	87	87	85	84	82	78	103.7
139	6/17	.50 cal.	30.5	Post-fled.		Cavity	73	72	81	73	78	78	80	79	83	88	94	111	104	89	88	84	94	89	92	100	99	93	89	92	90	87	84	81	79	75	72	68	64	60	112.8
139	6/17	.50 cal.	61	Post-fled.		Cavity	59	67	71	72	76	77	80	83	86	90	96	107	101	91	87	86	79	80	82	92	92	85	85	87	86	81	78	71	70	67	64	56	54	54	108.9
139	6/17	.50 cal.	61	Post-fled.		Base	51	59	68	68	75	77	79	83	86	89	89	87	87	87	80	78	77	80	80	80	81	82	84	82	82	81	79	77	76	74	72	68	64	57	97.6
139	6/17	.50 cal.	91.5	Post-fled.		Base	49	52	64	61	68	71	73	76	78	80	81	80	79	78	74	69	70	70	72	73	72	75	76	75	74	73	72	69	68	65	62	57	52	48	89.6
139	6/17	.50 cal.	91.5	Post-fled.		Cavity	52	51	63	60	68	70	72	75	77	82	87	99	93	87	85	80	73	73	78	85	88	81	82	86	85	77	73	62	63	58	55	50	47	47	101.2
139	6/17	.50 cal.	122	Post-fled.		Cavity	55	56	60	56	64	66	68	71	73	78	82	98	93	83	78	72	64	67	70	82	84	76	74	79	78	73	70	57	56	50	47	42	42	43	99.5
139	6/17	.50 cal.	122	Post-fled.		Base	44	47	59	55	65	67	68	72	74	76	77	76	75	74	68	59	59	62	65	67	69	69	70	69	67	67	65	62	61	58	54	49	45	44	84.9
143	5/27	.50 cal.	30.5	Post-fled.		Cavity	78	73	77	80	76	79	78	81	84	84	90	98	113	95	88	92	90	98	86	90	83	83	83	82	77	74	73	71	70	70	66	63	59	56	113.9
143	5/27	.50 cal.	30.5	Post-fled.		Cavity	66	68	77	79	75	80	77	82	85	86	91	100	113	95	88	93	91	98	85	89	83	83	83	83	80	76	74	71	72	70	67	65	61	56	113.8
143	5/27	.50 cal.	30.5	Post-fled.		Cavity	75	69	78	80	74	79	79	83	84	86	92	100	114	96	89	94	92	100	87	91	85	84	84	83	80	77	74	72	72	69	68	65	63	57	114.9

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
143	5/27	.50 cal.	30.5	Post-fled.		Base	66	64	68	73	74	78	80	82	86	85	86	92	91	86	87	84	79	78	78	80	82	83	83	82	81	84	81	81	81	81	81	80	78	73	98.9
143	5/27	.50 cal.	30.5	Post-fled.		Base	54	60	67	72	73	78	80	82	85	85	86	92	92	88	86	84	79	78	78	79	83	84	82	82	83	82	81	81	81	81	81	80	78	74	99.0
143	5/27	.50 cal.	30.5	Post-fled.		Base	61	61	68	75	75	80	82	85	86	87	88	94	93	89	88	85	81	77	78	79	82	83	82	82	82	83	82	80	81	82	81	80	78	73	100.2
143	5/27	.50 cal.	15.2	Post-fled.		Cavity	78	75	72	81	78	82	76	82	86	85	90	100	114	98	94	93	92	100	90	94	87	90	90	88	85	82	79	77	76	75	73	72	69	64	114.7
143	5/27	.50 cal.	15.2	Post-fled.		Cavity	68	62	68	69	75	75	68	78	80	80	86	96	110	93	90	88	89	96	85	90	83	85	85	84	80	77	75	72	73	70	68	67	64	60	110.8
143	5/27	.50 cal.	15.2	Post-fled.		Cavity	61	61	66	72	76	80	75	82	84	85	90	100	113	97	93	92	92	99	89	92	86	88	89	87	84	81	79	77	75	74	71	69	67	62	113.7
143	5/27	.50 cal.	15.2	Post-fled.		Base	73	74	75	82	80	84	84	86	85	87	89	94	94	91	91	88	88	87	89	88	88	89	91	92	89	90	88	88	89	89	88	88	88	85	104.0
143	5/27	.50 cal.	15.2	Post-fled.		Base	65	66	77	73	79	80	80	82	82	84	85	90	90	86	87	84	85	82	86	84	84	86	85	86	84	84	85	85	84	85	84	85	84	81	99.8
143	5/27	.50 cal.	15.2	Post-fled.		Base	60	65	74	76	79	83	83	85	84	85	88	93	92	89	90	87	88	86	90	87	86	89	89	91	89	90	88	87	88	88	87	87	87	84	103.0
148	4/23	.50 cal.	122	1		Base	38	50	52	57	61	64	67	69	72	73	73	71	69	69	62	56	59	61	67	66	66	66	66	67	66	65	63	60	58	52	47	41	38	37	81.5
148	4/23	.50 cal.	122	1		Base	49	60	62	63	67	71	73	76	78	80	79	77	76	74	68	60	65	69	72	73	73	73	74	74	73	73	72	71	70	65	62	57	51	44	88.3
148	4/23	.50 cal.	122	1		Base	47	56	58	60	65	69	71	74	76	77	76	74	72	72	64	56	61	65	68	70	69	70	70	69	68	68	67	66	62	57	52	44	38	38	85.1
148	4/23	.50 cal.	122	1		Base	50	59	61	64	68	72	74	77	79	80	80	78	76	76	68	62	67	70	73	75	74	74	75	74	72	72	69	66	63	60	56	48	42	41	88.8
148	4/23	.50 cal.	122	1		Base	45	47	53	56	62	67	69	72	75	76	76	74	73	73	66	56	61	64	67	68	68	69	69	70	68	67	66	63	60	55	51	45	38	37	84.5
148	4/27	.50 cal.	61	1		Base	61	63	65	63	68	71	74	76	78	81	81	80	76	79	74	69	71	75	76	76	76	77	77	77	76	76	74	73	71	70	68	59	53	48	90.6
148	4/27	.50 cal.	61	1		Base	51	52	63	63	68	70	74	77	77	82	81	79	76	79	75	70	71	75	75	76	75	77	78	77	76	76	75	73	72	69	68	60	55	52	90.6
148	4/27	.50 cal.	61	1		Base	55	59	65	63	69	71	73	76	78	81	81	80	76	79	75	69	71	74	77	76	75	77	77	76	76	75	74	72	71	69	67	59	52	47	90.4
148	4/27	.50 cal.	61	1		Base	49	54	60	60	63	66	69	72	74	77	76	74	73	74	70	64	66	70	71	71	71	71	72	72	71	70	69	67	67	64	63	55	49	45	85.7
148	5/3	.50 cal.	30.5	2	3.2	Base	62		71	78	77	82	85	87	89	92	94	95	95	94	93	90	81	82	81	83	82	83	83	82	83	82	80	79	77	74	70	61	57	44	103.0
151	5/10	.50 cal.	15.2	2	4.4	Base	81		77	84	84	87	87	87	91	91	92	91	88	96	97	94	89	89	88	93	93	91	93	89	88	88	86	85	85	84	84	82	80	77	105.2
151	5/10	.50 cal.	15.2	2	4.4	Base	74	63	77	85	85	86	88	88	90	92	92	92	89	97	99	94	90	90	87	94	93	91	93	90	88	88	87	86	86	85	84	83	81	77	105.9
151	5/10	.50 cal.	15.2	2	4.4	Base	77		78	87	84	86	88	89	93	93	93	93	89	98	100	96	91	92	89	95	94	92	94	90	90	89	88	87	86	85	85	83	81	77	106.9
151	5/10	.50 cal.	15.2	2	4.4	Base	73	76	82	86	84	87	88	89	91	93	93	93	90	98	100	95	90	91	89	93	94	93	93	91	90	90	88	87	86	85	85	83	81	77	106.8
151	6/14	.50 cal.	15.2	Post-fled.		Base	79	72	76	83	81	85	86	87	90	89	87	94	99	100	93	94	89	90	91	90	89	89	90	89	92	89	89	88	89	90	89	88	87	84	106.5
151	6/14	.50 cal.	15.2	Post-fled.		Cavity	85	74	73	76	76	82	80	82	85	87	91	108	113	95	92	91	98	95	94	101	97	94	93	91	89	89	87	85	81	79	77	75	70	66	115.1
151	6/14	.50 cal.	30.5	Post-fled.		Cavity	62	63	66	71	67	76	75	76	82	84	90	104	109	90	83	84	92	92	87	100	99	93	93	88	86	84	83	79	76	73	70	66	63	60	111.4
151	6/14	.50 cal.	30.5	Post-fled.		Base	71	64	65	75	72	79	80	82	83	84	83	88	93	91	86	88	83	83	83	85	84	84	87	86	85	86	85	84	87	85	84	81	79	75	100.4
151	6/14	.50 cal.	61	Post-fled.		Cavity	65	54	55	67	63	71	72	74	78	82	89	104	106	91	84	80	83	85	82	95	95	90	89	83	84	83	79	76	71	69	65	60	58	54	109.0
151	6/14	.50 cal.	61	Post-fled.		Base	54	50	52	66	61	71	72	74	75	77	77	76	78	72	65	65	63	61	64	67	68	68	68	68	68	67	67	65	64	62	59	54	47	41	85.7
162	6/3	.50 cal.	61	Post-fled.		Base	58	60	67	68	72	75	78	78	79	82	85	89	87	83	78	72	70	72	77	78	79	76	76	76	75	74	73	71	69	67	63	53	51		94.2
162	6/3	.50 cal.	61	Post-fled.		Base			70	69	69	72	76	79	79	81	84	88	87	83	78	70	70	72	77	78	78	75	76	75	75	73	72	71	69	67	63	51	50		93.9
162	6/3	.50 cal.	61	Post-fled.		Cavity	73	65	68	72	73	77	78	78	80	83	89	95	109	107	90	87	85	89	86	99	92	91	85	91	91	88	83	81	75	72	68	64	61	56	111.9
162	6/3	.50 cal.	61	Post-fled.		Cavity	71	55	66	76	74	77	77	79	80	84	89	96	110	108	91	86	86	89	88	100	93	92	86	93	91	88	83	81	76	73	69	65	61	57	112.7
162	6/3	.50 cal.	30.5	Post-fled.		Cavity	81	72	81	77		78	79	74	80	84	89	94	111	109	90	88	90	98	92	102	94	94	91	93	91	87	85	84	81	79	75	71	67	62	113.9
162	6/3	.50 cal.	30.5	Post-fled.		Cavity	78		76	78	65	76	78	76	79	85	90	95	111	110	91	89	91	99	92	101	94	93	90	93	90	89	85	84	83	78	75	71	67	63	114.6
162	6/3	.50 cal.	30.5	Post-fled.		Base	77		76	71	72	79	79	81	86	88	87	91	92	92	85	83	78	80	82	85	85	83	83	86	86	85	85	83	83	81	80	76	73	68	100.1
162	6/3	.50 cal.	15.2	Post-fled.		Base	75	75	84	85	87	88	90	91	93	95	96	99	103	98	100	96	90	90	93	91	90	92	93	94	94	94	92	92	91	90	89	87	84	80	109.4
162	6/3	.50 cal.	15.2	Post-fled.		Cavity	81	75	83	85	82	81	84	86	84	87	93	95	113	114	96	93	96	102	97	104	97	98	94	95	94	93	90	87	84	82	80	76	74	69	117.6
162	6/3	.50 cal.	15.2	Post-fled.		Cavity	89	69	83	88	83	84	87	87	88	88	95	97	115	115	97	94	96	104	97	105	98	99	96	95	94	93	91	88	86	83	81	79	76	71	118.4
163	5/17	.50 cal.	30.5	2	1.2	Base			66	62	69	74	76	79	81	82	85	84	86	88	86	78	75	76	77	78	78	82	82	81	82	84	81	79	78	78	77	75	72	66	96.1
163	5/17	.50 cal.	30.5	2	1.2	Base	56	58	59	70	76	75	80	82	84	84	86	87	87	90	88	80	77	76	79	79	80	83	83	82	82	85	84	80	79	79	78	76	72	67	97.8
163	5/17	.50 cal.	30.5	2	1.2	Base	71		68	74	72	77	79	81	84	83	86	86	87	89	88	80	77	76	79	79	79	82	83	83	82	85	83	79	78	79	77	75	72	66	97.4
163	5/17	.50 cal.	30.5	2	1.2	Base	64		67	71	75	76	79	81	83	83	86	86	87	89	88	80	77	76	78	78	80	81	83	83	83	85	83	81	80	79	78	76	73	67	97.5
163	5/17	.50 cal.	30.5	2	1.2	Base	65	63	67	73	73	77	80	81	84	84	86	86	88	90	89	80	77	76	79	80	81	83	83	83	84	85	85	84	82	81	80	78	74	68	98.4
163	5/17	.50 cal.	30.5	2	1.2	Base	66	56	68	75	72	79	82	84	85	86	88	88	89	92	90	81	78	78	81	81	81	84	86	84	83	86	85	82	81	81	79	77	74	68	99.5
163	6/21	.50 cal.	15.2	Post-fled.		Base	80	70	81	87	85	88	89	89	90	89	87	90	99	100	95	98	93	92	91	90	91	94	94	96	94	92	94	94	95	97	97	97	96	94	109.1

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
							Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		
163	6/21	.50 cal.	15.2	Post-fled.		Base	83	75	83	87	86	89	89	89	90	89	87	91	99	100	95	97	92	93	92	91	93	94	93	95	95	94	93	94	94	97	97	97	97	94	109.4
163	6/21	.50 cal.	15.2	Post-fled.		Cavity	84	74	78	86	77	81	81	80	83	87	91	105	115	95	89	95	97	100	92	99	96	92	90	94	92	89	89	89	86	84	82	79	76	71	116.3
163	6/21	.50 cal.	15.2	Post-fled.		Cavity	84	73	81	84	78	83	82	82	84	87	91	105	116	95	88	95	98	100	93	99	96	93	91	94	94	90	89	88	87	86	84	80	77	74	117.0
163	6/21	.50 cal.	30.5	Post-fled.		Cavity	69	68	69	75	77	80	80	85	89	87	90	98	110	90	86	88	91	94	90	98	93	92	88	92	88	90	90	88	89	88	90	70	67	62	110.9
163	6/21	.50 cal.	30.5	Post-fled.		Cavity	72	74	75	77	80	84	83	86	89	89	92	101	112	92	87	89	93	96	92	98	94	93	89	93	90	92	91	90	90	90	91	72	68	65	113.4
163	6/21	.50 cal.	30.5	Post-fled.		Base	66	61	67	75	76	78	81	83	84	84	86	86	90	93	89	85	82	82	82	83	83	87	86	87	88	87	86	86	86	87	87	88	86	83	101.0
163	6/21	.50 cal.	30.5	Post-fled.		Base	61	74	74	78	79	81	83	85	87	88	88	88	91	93	89	85	80	82	84	84	84	86	87	89	89	88	87	86	86	87	88	88	86	82	101.7
163	6/21	.50 cal.	61	Post-fled.		Base	54	69	69	75	78	81	83	85	87	87	87	85	90	90	81	75	74	80	81	80	83	84	84	84	85	85	83	82	82	81	80	78	74	66	98.7
163	6/21	.50 cal.	61	Post-fled.		Cavity	67	75	73	73	72	74	75	78	81	84	87	101	111	94	85	87	87	87	90	97	91	84	84	89	87	85	87	85	84	82	82	66	61	58	111.8
163	6/21	.50 cal.	91.5	Post-fled.		Cavity	57	62	64	65	69	71	72	75	76	78	84	97	107	90	85	81	83	81	82	89	86	80	80	86	84	80	81	78	77	76	77	57	54	52	107.6
163	6/21	.50 cal.	91.5	Post-fled.		Cavity	54	54	60	56	62	67	68	70	72	76	83	96	105	89	84	80	80	76	76	86	84	78	77	86	82	78	80	75	74	72	73	55	52	51	105.9
163	6/21	.50 cal.	91.5	Post-fled.		Base	51	50	65	61	71	73	75	77	80	81	81	80	82	81	76	72	70	69	70	72	73	74	73	74	74	74	73	71	70	69	67	64	59	53	90.8
163	6/21	.50 cal.	91.5	Post-fled.		Base	50	50	65	59	69	72	73	76	78	80	80	78	81	80	75	71	69	69	69	70	71	72	73	72	73	72	72	71	70	68	66	63	58	52	89.3
163	6/21	.50 cal.	122	Post-fled.		Cavity	66	70	67	68	72	72	74	77	80	80	85	96	105	87	82	80	85	86	84	92	87	84	81	86	83	84	83	82	81	81	82	57	55	52	106.0
163	6/21	.50 cal.	122	Post-fled.		Base	52	50	57	65	66	70	72	74	77	77	78	78	80	77	72	68	64	68	70	71	73	74	74	74	75	73	74	72	71	68	67	63	57	53	88.4
163	6/21	.50 cal.	122	Post-fled.		Base	49	49	58	64	66	70	72	74	76	77	77	77	79	77	72	67	64	67	70	72	74	76	75	73	74	75	73	71	69	67	65	60	55	49	88.3
163	6/21	.50 cal.	15.2	Post-fled.		Cavity	82	84	81	86	81	81	82	84	81	79	85	87	91	100	108	99	93	95	96	95	92	85	85	85	82	79	75	73	70	67	63	60	57	57	109.7
163	6/21	.50 cal.	15.2	Post-fled.		Cavity	66	73	78	77	79	79	78	79	82	83	85	89	96	107	101	93	90	91	97	98	90	88	85	84	78	77	73	70	66	63	60	58	58	59	109.4
163	6/21	.50 cal.	15.2	Post-fled.		Base	72	66	77	80	82	81	84	85	87	89	89	88	87	94	93	87	85	85	88	89	89	89	91	88	88	87	86	87	87	89	88	88	87	84	103.0
163	6/21	.50 cal.	15.2	Post-fled.		Base	70	72	80	78	82	83	84	85	87	89	90	88	87	94	95	87	86	85	87	88	89	90	91	90	88	88	87	86	87	88	89	90	89	86	103.6
163	6/21	.50 cal.	30.5	Post-fled.		Base	58	55	70	68	76	77	79	82	84	87	88	88	85	88	85	78	76	77	78	79	78	79	78	79	79	78	77	76	76	75	75	73	71	65	96.6
163	6/21	.50 cal.	30.5	Post-fled.		Base	54	54	70	65	76	78	79	82	84	86	88	88	86	87	85	79	75	78	77	79	77	78	78	78	79	78	77	76	76	75	74	73	71	65	96.5
163	6/21	.50 cal.	30.5	Post-fled.		Cavity	64	71	75	74	79	82	82	80	78	78	82	86	88	97	106	92	85	85	89	95	85	84	81	80	78	75	70	67	63	58	55	52	49	48	107.2
163	6/21	.50 cal.	30.5	Post-fled.		Cavity	60	60	75	69	79	78	78	78	77	77	80	85	88	97	106	92	85	84	89	95	85	85	82	82	80	75	69	67	63	59	56	52	49	48	107.2
163	6/21	.50 cal.	61	Post-fled.		Cavity	69	62	69	73	69	69	73	75	76	78	81	83	87	95	102	89	82	81	85	93	83	77	80	81	76	72	66	61	61	56	50	47	46	47	103.9
163	6/21	.50 cal.	61	Post-fled.		Base	52	49	61	67	71	70	75	78	79	82	82	81	78	80	75	65	68	71	75	77	76	75	76	74	74	74	73	72	71	70	69	66	62	55	90.7
163	6/21	.50 cal.	91.5	Post-fled.		Cavity	53	53	62	65	69	70	73	75	77	79	80	82	86	95	102	88	79	81	85	93	83	77	79	81	75	70	62	61	57	51	47	44	44	45	103.4
163	6/21	.50 cal.	91.5	Post-fled.		Base	57	53	64	66	71	72	75	77	80	82	81	79	76	78	73	63	65	71	74	76	74	76	76	75	74	73	71	69	69	67	65	62	57	50	89.9
163	6/21	.50 cal.	122	Post-fled.		Base	56	53	61	65	70	69	74	76	78	79	79	75	70	69	67	60	64	69	71	72	73	73	73	71	70	69	68	66	65	63	60	55	50	47	87.1
163	6/21	.50 cal.	122	Post-fled.		Base	53	51	62	65	69	69	74	76	78	79	79	75	70	69	68	60	64	70	72	71	73	73	72	71	70	69	67	66	65	62	60	55	50	47	87.1
163	6/21	.50 cal.	122	Post-fled.		Cavity	53	48	58	63	67	67	71	73	75	76	77	79	81	89	97	84	78	78	81	89	79	71	72	73	70	62	56	55	51	44	41	42	44	45	99.1
163	6/21	.50 cal.	122	Post-fled.		Cavity	57	52	60	62	67	68	71	73	75	76	78	78	82	90	98	84	78	78	82	90	79	72	72	74	70	63	57	56	51	45	42	42	44	45	99.5
176	4/28	.50 cal.	122	2	11.7	Base	59	51	61	66	68	73	76	78	79	81	82	79	76	76	77	70	70	71	70	72	72	71	72	72	72	71	70	69	66	64	60	52	47		89.4
176	4/28	.50 cal.	122	2	11.7	Base	54	58	59	65	66	73	74	77	79	80	80	78	75	74	74	68	69	70	70	70	71	72	71	71	71	70	68	67	66	63	59	50	46		88.2
176	4/28	.50 cal.	122	2	11.7	Base	56		59	63	66	70	72	76	78	79	80	77	73	73	73	67	66	68	70	68	68	70	69	70	70	69	67	66	64	62	58	47	44		87.0
176	4/28	.50 cal.	122	2	11.7	Base		51		64	64	70	73	75	77	79	79	76	73	71	72	68	65	70	69	67	67	68	69	69	69	68	67	65	63	60	56	47	41	30	86.4
176	5/26	.50 cal.	15.2	2	7.1	Base	64	51	61	67	70	70	75	76	79	80	79	79	77	73	71	66	65	69	69	69	69	70	71	71	71	71	70	68	66	64	60	53	47	30	88.0
176	5/26	.50 cal.	15.2	2	7.1	Base		51	62	66	71	71	75	78	80	80	80	80	77	74	70	67	67	68	70	70	70	71	72	72	72	72	70	69	67	65	61	53	48		88.8
176	5/26	.50 cal.	15.2	2	7.1	Base	51		58	51	63	67	71	74	76	77	77	77	74	71	68	64	63	66	65	65	66	67	68	68	69	70	67	66	64	61	59	52	47		85.3
176	5/27	.50 cal.	61	2	5.5	Base	62	63	63	68	69	73	75	77	80	80	81	79	80	80	73	69	72	71	71	71	73	77	78	79	78	79	78	72	70	69	67	64	59	49	91.1
176	5/27	.50 cal.	61	2	5.5	Base	55	54	64	67	73	74	76	78	81	82	82	80	81	81	75	69	72	70	72	73	74	79	79	79	80	81	79	74	72	71	68	64	59	50	92.2
176	5/27	.50 cal.	61	2	5.5	Base			60	70	68	75	77	79	81	82	83	80	81	81	75	68	73	71	72	74	73	78	78	78	76	75	75	71	71	69	67	64	59	48	91.6
176	5/27	.50 cal.	61	2	5.5	Base	59	58	64	71	71	76	78	81	82	84	84	82	83	82	76	71	75	73	74	74	74	79	80	79	77	77	76	74	72	71	68	65	60	49	93.1
194	4/19	.50 cal.	61	0		Base	47	50	58	60	64	67	69	72	75	77	79	79	78	76	70	66	64	66	68	69	69	71	71	69	70	74	73	72	69	67	66	65	62	55	87.4
194	4/19	.50 cal.	61	0		Base	55	53	66	69	75	74	78	81	84	86	88	88	88	86	79	74	70	73	75	77	77	79	80	78	80	83	80	79	78	77	74	73	69	63	96.5
194	4/19	.50 cal.	61	0		Base	59	56	66	69	74	74	78	81	84	85	88	88	87	85	78	72	70	73	76	76	78	79	79	77	78	77	77	75	74	73	70	68	65	59	95.5

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
							Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		
194	4/19	.50 cal.	61	0		Base	57	53	67	67	74	74	77	80	83	84	86	87	86	84	78	73	69	71	73	74	78	78	78	77	78	79	77	77	75	73	73	69	65	58	94.7
194	4/19	.50 cal.	61	0		Base	51	51	62	64	69	70	73	76	78	80	83	83	82	80	74	69	64	66	69	71	72	74	75	73	72	72	71	70	70	68	66	63	59	51	90.7
194	4/19	.50 cal.	61	0		Base	50	52	64	64	72	73	76	78	82	83	85	85	84	82	76	72	68	70	72	74	74	75	75	74	74	74	73	72	72	70	68	65	61	55	92.9
194	4/19	.50 cal.	61	0		Base	63	59	69	73	76	78	81	83	86	88	91	90	89	87	80	76	73	75	77	79	79	80	81	80	80	82	81	78	77	75	74	71	67	60	98.1
194	4/19	.50 cal.	61	0		Base	58	54	66	68	74	73	77	80	82	84	87	86	85	83	77	72	69	69	72	74	75	77	76	75	75	75	75	72	72	69	67	65	60	53	94.0
194	4/28	.50 cal.	30.5	0		Base	64	60	71	71	77	79	81	83	85	88	91	91	89	90	90	87	80	81	81	82	81	81	83	83	85	83	83	82	80	77	74	72	69	64	99.7
194	4/28	.50 cal.	30.5	0		Base	61	61	73	72	78	80	82	85	87	90	93	92	91	90	91	89	81	82	82	83	82	83	83	84	85	85	82	83	79	78	76	74	71	66	100.9
194	4/28	.50 cal.	30.5	0		Base	59	60	74	70	78	81	82	84	87	90	93	92	91	91	91	89	81	81	82	83	82	82	83	82	84	84	83	82	79	78	75	72	69	64	101.1
194	4/28	.50 cal.	30.5	0		Base	62	62	73	74	78	81	83	85	88	91	93	93	93	92	92	90	82	82	82	84	83	83	84	84	85	85	84	83	80	79	76	74	71	65	101.9
194	4/28	.50 cal.	30.5	0		Base	50	53	58	62	70	73	75	77	80	83	85	85	84	83	83	82	74	75	74	75	74	75	75	75	77	75	73	74	71	70	68	64	62	57	93.6
194	5/26	.50 cal.	15.2	Post-fled.		Base	81	76	79	85	84	87	88	89	89	92	93	93	93	96	98	96	89	91	88	87	87	88	91	92	90	89	88	89	87	88	86	84	83	79	105.8
194	5/26	.50 cal.	15.2	Post-fled.		Base	83	74	77	86	81	87	88	89	89	92	92	93	94	97	98	95	89	92	88	86	87	89	90	91	89	89	87	87	86	86	84	83	81	77	105.7
194	5/26	.50 cal.	15.2	Post-fled.		Base	82	77	77	88	85	90	90	91	92	94	95	95	96	99	101	98	91	94	90	88	89	90	92	93	91	91	90	89	88	88	86	85	83	79	108.0
194	5/26	.50 cal.	15.2	Post-fled.		Cavity	81	78	76	83	79	80	84	85	85	89	100	116	100	91	93	92	102	87	95	92	89	89	88	93	91	85	86	82	80	80	75	73	70	65	116.6
194	5/26	.50 cal.	15.2	Post-fled.		Cavity	86	74	71	84	77	80	86	84	86	90	101	116	100	92	93	92	102	87	95	92	88	88	88	93	90	85	86	83	80	79	76	74	70	65	116.5
194	5/26	.50 cal.	15.2	Post-fled.		Cavity	84	77	73	85	79	84	88	87	88	93	103	118	103	94	95	94	104	90	97	94	90	89	90	95	91	86	88	84	82	81	79	77	73	68	118.6
194	5/26	.50 cal.	30.5	Post-fled.		Cavity	82	77	70	83	79	83	83	86	87	93	103	116	102	94	92	90	98	85	91	90	87	83	85	90	87	80	79	79	77	76	72	68	65	60	116.7
194	5/26	.50 cal.	30.5	Post-fled.		Cavity	78	71	70	82	75	82	83	86	86	92	102	116	101	94	92	89	98	86	89	88	85	82	86	90	86	79	77	77	76	75	69	65	62	57	116.7
194	5/26	.50 cal.	30.5	Post-fled.		Cavity	79	76	73	81	80	80	81	83	85	91	101	116	100	92	93	90	99	86	90	87	85	82	84	88	84	78	77	76	74	73	68	64	62	56	116.9
194	5/26	.50 cal.	30.5	Post-fled.		Base	75	72	66	80	76	84	85	87	88	91	93	93	93	98	96	94	84	83	84	85	84	84	84	84	84	85	86	84	83	81	78	75	72	66	104.1
194	5/26	.50 cal.	30.5	Post-fled.		Base	72	62	65	79	73	83	85	88	88	90	92	93	93	98	97	93	83	82	83	84	84	85	84	84	84	84	84	84	83	81	78	76	71	65	104.0
194	5/26	.50 cal.	30.5	Post-fled.		Base	66	63	69	78	78	83	85	87	88	91	92	93	93	98	96	93	83	82	83	84	83	83	82	83	83	83	82	82	82	79	77	74	70	64	103.8
199	5/11	.50 cal.	15.2	Inactive		Base	89					85	88	82	93	92	88	93	95	98	99	95	93	93	92	90	90	91	91	92	91	89	90	89	89	89	87	85	83	79	106.7
199	5/11	.50 cal.	15.2	Inactive		Base	91		98	94		96	94	88	99	97	93	98	98	102	103	98	98	96	95	92	93	94	94	94	94	95	95	93	93	93	91	87	86	81	111.1
199	5/11	.50 cal.	15.2	Inactive		Base	95		99	89		99	96	97			98	102	102	106	107	102	101	99	98	96	97	97	97	97	97	98	98	97	96	96	95	92	89	83	114.8
199	5/11	.50 cal.	15.2	Inactive		Cavity	93		91			88		79	85	86	87	94	94	107	109	93	88	92	98	89	90	90	87	85	83	77	81	78	77	75	72		74		111.8
199	5/11	.50 cal.	15.2	Inactive		Cavity			96	91	82	91	94	86	91	89	91	96	98	110	113	97	91	93	102	95	94	95	92	91	88	84	86	82	76	79	74	71	74	-190	115.3
199	5/11	.50 cal.	30.5	Inactive		Base			63	65	69	71	74	77	79	80	82	83	85	89	86	77	85	83	79	78	76	77	76	76	77	77	75	74	74	73	72	69	66	59	95.2
199	5/11	.50 cal.	30.5	Inactive		Base	70	62	69	76	74	78	81	83	85	86	87	89	91	94	92	83	90	87	84	82	82	82	81	82	82	83	82	81	82	80	78	75	72	66	100.6
199	5/11	.50 cal.	30.5	Inactive		Cavity	60	61	68	69	72	71	74	74	76	78	82	85	91	101	102	87	84	84	91	86	83	81	78	73	70	71	69	68	67	65	65	60	57	52	105.5
199	5/11	.50 cal.	30.5	Inactive		Cavity	77	70	74	80	78	80	80	80	82	84	87	90	96	107	108	92	89	89	96	91	89	87	84	79	76	76	75	74	72	71	71	66	62	57	110.8
199	5/11	.50 cal.	61	Inactive		Base	71	67	71	79	79	84	87	89	91	93	94	94	90	95	95	86	88	84	83	85	85	84	83	83	83	81	80	79	77	75	72	66	60	46	103.0
199	5/11	.50 cal.	61	Inactive		Cavity	66	65	69	78	78	84	87	87	88	89	94	99	100	112	114	100	95	90	94	94	90	89	87	80	79	80	79	79	77	75	75	65	63	59	116.9
201	6/17	.50 cal.	15.2	Post-fled.		Base	76	74	86	82	87	87	89	90	90	92	93	92	92	100	97	96	96	94	91	89	88	90	89	89	90	91	90	89	89	90	90	88	86	83	107.1
201	6/17	.50 cal.	15.2	Post-fled.		Cavity	69	68	80	77	82	84	87	91	93	96	97	100	99	98	91	91	85	86	84	78	81	80	83	85	79	75	81	82	79	74	71	70	68	65	106.1
201	6/17	.50 cal.	30.5	Post-fled.		Cavity	60	61	76	70	78	81	83	88	91	95	96	97	100	95	95	87	80	77	79	77	76	80	80	82	75	73	79	78	75	69	66	68	63	56	105.0
201	6/17	.50 cal.	30.5	Post-fled.		Base	61	63	77	70	78	80	80	85	86	90	91	87	92	94	97	91	93	88	85	82	83	84	83	83	84	84	84	84	85	83	79	77	74	69	102.8
201	6/17	.50 cal.	61	Post-fled.		Base	55	58	68	67	73	75	78	80	81	85	86	85	86	90	88	84	87	83	80	79	78	77	76	76	75	75	74	73	72	71	68	65	61	57	96.8
201	6/17	.50 cal.	61	Post-fled.		Cavity	53	59	68	67	73	76	79	82	84	88	90	92	94	92	87	83	79	75	67	67	72	75	78	82	73	68	74	73	73	62	59	59	54	53	99.7
201	6/17	.50 cal.	61	Post-fled.		Cavity	52	52	62	61	68	70	73	77	79	81	83	86	88	87	82	77	70	65	60	60	68	71	75	80	66	59	67	64	65	53	49	46	42	43	93.7
201	6/17	.50 cal.	91.5	Post-fled.		Base	53	51	63	62	68	70	73	75	76	79	81	81	82	85	83	78	76	73	73	72	73	74	73	74	73	72	71	70	70	66	63	61	54	50	91.6
201	6/17	.50 cal.	122	Post-fled.		Base	66	66	67	65	69	70	72	73	75	75	77	77	79	84	84	79	76	71	70	72	72	72	71	71	70	69	68	66	64	61	57	52	48	48	90.4
201	6/17	.50 cal.	122	Post-fled.		Cavity	64	66	65	62	68	69	72	75	77	77	80	83	85	86	85	80	72	66	58	60	65	69	75	80	67	64	74	69	68	58	54	53	47	46	92.7
201	6/17	.50 cal.	15.2	Post-fled.		Base	69	73	84	79	85	86	87	90	90	91	89	91	95	98	94	95	90	90	90	87	89	90	92	90	90	92	90	89	92	90	89	88	86	83	105.8
201	6/17	.50 cal.	15.2	Post-fled.		Cavity	71	70	81	73	75	73	78	77	81	89	93	92	106	112	95	91	90	98	95	97	90	92	89	88	87	84	84	81	80	77	75	73	69	65	113.3
201	6/17	.50 cal.	30.5	Post-fled.		Cavity	63	67	73	68	76	81	80	78	82	85	86	90	102	110	94	88	89	92	90	91	84	86	82	81	80	77	78	74	73	69	66	65	59	54	111.2

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
							Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																			
201	6/17	.50 cal.	30.5	Post-fled.		Base	53	61	72	69	75	78	80	82	84	86	86	86	91	94	88	86	83	83	79	79	81	81	83	84	82	83	84	80	80	79	76	74	71	68	99.3
201	6/17	.50 cal.	61	Post-fled.		Base	51	53	66	62	70	73	74	78	80	82	83	82	86	86	81	79	74	73	72	73	74	74	76	77	78	78	76	73	71	67	65	63	60	55	93.4
201	6/17	.50 cal.	61	Post-fled.		Cavity	62	62	70	69	73	75	76	78	78	81	84	89	100	106	92	87	83	84	85	87	79	78	75	77	76	75	75	67	69	64	60	58	54	51	107.3
201	6/17	.50 cal.	91.5	Post-fled.		Cavity	57	60	63	61	68	70	72	75	79	81	85	89	100	103	92	82	80	78	77	85	75	74	72	77	78	76	77	66	67	61	54	52	45	44	105.6
201	6/17	.50 cal.	91.5	Post-fled.		Base	49	51	64	59	69	71	73	75	78	79	80	79	83	82	75	72	69	70	70	71	71	71	72	71	71	71	70	67	66	62	59	55	49	45	89.7
201	6/17	.50 cal.	122	Post-fled.		Base	54	54	62	60	66	70	71	72	76	75	77	76	78	76	69	70	66	69	68	69	69	69	69	68	67	67	65	62	61	58	54	49	46	47	86.1
201	6/17	.50 cal.	122	Post-fled.		Cavity	61	64	66	64	66	69	70	72	76	77	82	86	95	97	86	81	78	78	76	85	75	70	67	69	69	67	68	60	61	54	48	46	44	46	100.2
205	4/22	.50 cal.	61	2	5.0	Base	46	53	52	61	65	68	69	72	74	76	76	77	75	76	76	70	67	67	67	68	66	65	68	67	68	67	66	65	63	60	56	51	45	43	85.7
205	4/26	.50 cal.	122	1		Base			56	54	54	62	64	67	70	73	77	78	77	76	76	75	69	67	63	61	60	61	62	62	63	64	61	60	59	56	52	45	41		85.3
205	4/26	.50 cal.	122	1		Base	57		56	54	65	67	67	69	73	74	76	78	77	77	76	75	69	66	65	64	64	65	64	64	65	63	63	61	58	57	52	44	39		85.7
205	4/26	.50 cal.	122	1		Base			54	52	51	59	63	66	70	73	76	77	76	76	75	74	67	64	62	61	60	61	62	62	62	61	61	60	58	55	51	43	39		84.5
205	4/26	.50 cal.	122	1		Base	53	47	60	53	62	65	67	69	72	74	76	77	76	76	75	76	69	65	65	63	62	63	66	64	64	63	62	61	59	56	52	43	40		85.3
205	4/26	.50 cal.	122	1		Base	59		58	56	54	61	64	68	71	74	76	78	76	76	75	76	68	66	64	62	60	62	64	64	63	63	61	60	58	56	51	44	40		85.2
205	4/26	.50 cal.	122	1		Base	56		58		53	60	63	66	69	71	73	74	74	73	73	73	66	65	63	60	59	60	62	61	61	59	59	57	55	54	50	43	37		82.5
205	4/29	.50 cal.	91.5	1		Base	38	42	51	57	61	66	69	72	75	75	76	76	76	78	77	70	69	64	63	65	64	66	67	66	66	66	66	64	62	59	55	49	44	42	85.8
205	4/29	.50 cal.	91.5	1		Base	41	42	53	59	63	65	69	72	74	76	76	75	75	79	76	70	69	65	65	68	67	68	68	67	67	66	64	63	61	58	53	49	44	42	85.9
205	4/29	.50 cal.	91.5	1		Base	49	51	54	62	61	66	69	72	75	75	76	76	76	78	76	71	68	65	64	66	66	69	68	71	70	71	67	67	66	62	59	53	47	45	86.2
205	4/29	.50 cal.	91.5	1		Base	33	45	55	60	62	65	69	72	74	75	76	75	75	78	75	69	68	64	64	65	65	67	68	69	69	68	68	67	65	62	57	52	45	42	85.6
205	4/29	.50 cal.	91.5	1		Base	50	50	55	61	62	65	69	71	74	75	75	75	74	77	75	68	68	64	65	66	66	66	68	71	70	71	68	65	63	59	56	51	47	43	85.3
205	4/29	.50 cal.	91.5	1		Base	38	48	55	62	63	66	69	72	75	76	76	76	75	78	76	70	68	64	64	66	66	67	67	68	68	67	68	66	64	59	54	48	43	42	85.8
205	4/29	.50 cal.	91.5	1		Base	48	48	57	61	64	66	70	73	74	77	77	76	76	80	77	71	69	65	65	66	66	68	66	68	68	69	66	65	62	60	56	51	46	43	86.7
205	6/2	.50 cal.	122	Post-fled.		Cavity	53		62	60	65	67	70	71	73	76	79	83	88	99	105	89	83	80	77	80	80	70	65	67	59	58	54	53	51	49	46	41	42	37	106.1
205	6/2	.50 cal.	122	Post-fled.		Base	53		59	62	63	66	69	70	73	74	74	73	77	77	72	69	71	64	66	67	66	69	68	68	68	66	65	62	60	57	50	41	37		84.8
205	6/2	.50 cal.	122	Post-fled.		Base	54		57	60	62	66	69	69	73	73	74	72	76	77	73	70	70	64	65	66	65	68	68	68	67	66	64	62	59	56	50	40	36	27	84.5
205	6/2	.50 cal.	91.5	Post-fled.		Base	54		57	63	65	66	69	71	73	75	74	73	75	78	73	70	68	64	64	65	66	67	68	67	67	66	65	63	61	58	54	45	39	28	84.9
205	6/2	.50 cal.	91.5	Post-fled.		Base	59	60	60	60	66	66	70	73	74	77	76	75	77	80	74	72	70	67	67	66	67	69	69	69	69	68	67	65	63	60	56	46	42		86.6
205	6/2	.50 cal.	91.5	Post-fled.		Cavity			57	62	64	67	69	71	72	76	79	83	85	96	101	87	79	75	72	78	77	65	63	65	57	56	50	51	50	48	43	40	36	34	102.4
205	6/2	.50 cal.	91.5	Post-fled.		Cavity	52	56	60	65	68	70	73	75	76	80	82	87	89	100	105	91	83	81	77	81	82	69	67	71	62	62	57	57	55	56	50	45	42	38	106.2
205	6/2	.50 cal.	61	Post-fled.		Cavity	75	68	77	80	80	78	78	79	83	84	86	88	92	104	111	93	87	85	93	93	84	83	77	75	73	71	68	65	63	59	55	51	47	44	112.0
205	6/2	.50 cal.	61	Post-fled.		Cavity	70	67	71	81	74	79	77	80	82	83	86	89	92	104	111	92	86	86	94	94	85	85	78	76	74	71	69	66	64	60	56	53	49	43	112.3
205	6/2	.50 cal.	61	Post-fled.		Base	58		67	72	73	75	79	80	83	85	84	83	87	89	86	81	76	72	73	73	73	74	74	74	75	75	73	72	71	70	66	60	54		95.2
205	6/2	.50 cal.	61	Post-fled.		Base	62		63	69	68	75	79	81	83	85	85	84	88	89	86	82	77	73	73	72	72	73	74	73	74	74	73	72	71	69	66	60	54	39	95.6
205	6/2	.50 cal.	30.5	Post-fled.		Base	68	62	71	65	74	77	79	81	83	85	85	84	88	92	90	88	86	83	80	78	79	78	79	79	79	78	76	76	75	75	73	70	66	59	98.1
205	6/2	.50 cal.	30.5	Post-fled.		Base	68	65	73	73	78	80	82	85	86	88	88	87	91	95	93	91	90	86	82	81	82	81	81	81	81	81	79	79	78	77	75	73	69	61	101.2
205	6/2	.50 cal.	30.5	Post-fled.		Cavity	69	50	78	74	76	76	77	78	77	80	82	85	88	102	112	95	89	87	94	96	87	90	86	82	78	75	73	71	70	66	62	59	56	52	113.0
205	6/2	.50 cal.	30.5	Post-fled.		Cavity	72	70	78	79	77	75	78	77	77	79	81	84	87	103	112	94	89	87	94	96	86	91	86	82	79	75	73	70	69	66	62	59	55	50	113.0
205	6/2	.50 cal.	15.2	Post-fled.		Cavity	92	95	94	94	91	90	90	85	86	86	88	90	97	108	113	100	93	92	97	99	92	94	91	89	87	84	82	79	76	73	71	68	65	59	115.3
205	6/2	.50 cal.	15.2	Post-fled.		Base	73	68	77	81	84	84	86	86	87	87	84	87	93	93	93	89	92	90	91	86	85	86	86	89	91	91	89	90	91	92	92	91	89	86	104.4
205	6/2	.50 cal.	15.2	Post-fled.		Base	84	74	80	86	80	87	87	88	89	88	86	89	95	94	94	91	94	91	92	86	87	90	88	90	90	91	90	91	91	91	90	90	89	86	105.3
205	6/2	.50 cal.	122	Post-fled.		Base	59	47	56	62	65	69	70	72	74	75	75	77	78	72	74	71	68	67	66	68	68	69	69	69	69	68	67	66	63	60	56	49	43	30	85.6
205	6/2	.50 cal.	122	Post-fled.		Cavity	47	56	57	63	64	68	68	71	73	76	82	91	106	93	82	77	71	68	66	87	81	83	70	68	74	72	64	67	62	57	53	49	44	37	106.5
205	6/2	.50 cal.	91.5	Post-fled.		Cavity		51	59	68	67	71	72	75	78	78	84	94	110	95	86	79	73	76	71	84	81	84	74	73	78	77	71	75	70	67	67	65	60	52	110.3
205	6/2	.50 cal.	91.5	Post-fled.		Cavity	60	56	61	66	64	71	72	74	77	78	84	93	108	95	86	80	73	71	66	85	82	84	72	73	80	76	71	75	69	65	63	60	54	47	108.8
205	6/2	.50 cal.	91.5	Post-fled.		Base	49	58	57	65	67	70	73	74	77	76	77	80	81	77	77	73	70	67	67	67	68	69	70	69	70	69	68	67	65	63	60	54	46		88.1
205	6/2	.50 cal.	91.5	Post-fled.		Base	52	53	61	67	66	71	72	74	75	76	77	79	80	76	77	73	70	68	67	67	68	69	70	69	70	69	68	66	64	63	59	52	48		87.6
205	6/2	.50 cal.	61	Post-fled.		Base			66	68	74	74	77	81	81	82	84	85	86	85	87	83	79	77	75	76	76	76	76	77	78	77	75	76	75	73	70	68	64	57	94.9

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec. Time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc.
							10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Overall SEL
205	6/2	.50 cal.	61	Post-fled.		Base	65		69	66	70	75	77	79	81	82	83	85	86	84	86	82	77	77	74	74	73	74	74	75	76	76	73	72	71	69	67	63	58	45	94.1
205	6/2	.50 cal.	61	Post-fled.		Cavity		64	71	72	76	76	76	78	80	82	87	96	112	99	90	86	79	87	82	90	87	88	82	78	82	77	75	78	76	72	71	69	65	57	112.2
205	6/2	.50 cal.	61	Post-fled.		Cavity	64	70	74	70	76	76	76	77	80	81	86	96	110	98	91	86	79	83	79	90	85	87	79	78	83	77	73	77	74	70	69	65	60	53	110.8
205	6/2	.50 cal.	30.5	Post-fled.		Cavity	77	78	77	77	80	78	81	83	85	86	91	101	118	101	91	93	87	99	87	101	95	95	89	89	86	84	81	82	80	75	73	73	68	62	118.1
205	6/2	.50 cal.	30.5	Post-fled.		Base	68	68	74	76	78	80	83	85	87	89	90	93	94	90	95	93	85	87	85	86	85	85	84	85	87	86	84	83	82	82	81	80	77	71	102.7
205	6/2	.50 cal.	15.2	Post-fled.		Base		96	94	97	94	96	95	94	94	93	92	95	97	92	96	95	93	93	92	90	89	90	91	92	92	93	93	94	94	95	96	96	95	92	109.8
205	6/2	.50 cal.	15.2	Post-fled.		Cavity	83	76	80	84	83	82	84	85	87	89	94	102	119	104	92	99	93	107	94	101	96	97	94	91	90	88	87	89	87	84	81	80	76	72	119.9
206	5/4	.50 cal.	61	0		Base	67	80	82	83	86	86	88	91	93	95	97	93	89	90	88	84	85	82	85	89	86	84	85	85	84	82	80	80	78	76	74	69	63	56	103.2
206	5/9	.50 cal.	30.5	2	3.3	Base		61	71	69	72	75	77	80	81	83	83	86	89	91	85	88	83	79	75	77	78	76	75	76	76	76	75	75	74	71	68	65	62	57	96.9
206	5/9	.50 cal.	30.5	2	3.3	Base	73	65	75	77	79	81	84	85	87	89	89	92	96	97	92	94	89	85	81	82	83	82	81	82	81	81	80	79	78	75	73	69	66	60	103.2
206	5/9	.50 cal.	30.5	2	3.3	Base	61	62	74	78	80	82	85	87	89	91	90	94	98	99	93	96	91	86	82	84	84	83	82	83	83	82	81	80	78	77	73	70	66	60	104.6
206	5/9	.50 cal.	30.5	2	3.3	Base	68	61	70	78	76	82	84	85	88	89	89	92	96	98	91	95	90	85	81	83	83	82	82	82	81	81	79	79	77	75	72	68	64	57	103.4
206	6/14	.50 cal.	15.2	Post-fled.		Base	77	72	76	84	82	84	86	87	89	92	94	95	94	88	96	100	94	91	93	91	89	89	91	92	92	91	91	90	90	91	91	91	91	89	107.0
206	6/14	.50 cal.	15.2	Post-fled.		Cavity	79	74	76	84	81	84	90	90	89	89	97	101	117	105	94	97	96	104	96	101	98	95	95	96	93	91	91	90	88	85	84	82	79	76	118.2
206	6/14	.50 cal.	30.5	Post-fled.		Cavity	87	73	76	84	80	84	83	83	89	91	93	99	117	104	93	96	94	103	93	100	96	92	93	92	91	89	88	84	84	82	79	75	71	66	118.0
206	6/14	.50 cal.	30.5	Post-fled.		Base	71	63	70	77	76	80	82	84	87	89	91	93	93	91	91	95	91	84	86	83	84	83	83	84	85	85	83	83	82	82	81	80	79	75	102.5
206	6/14	.50 cal.	61	Post-fled.		Base	58	55	66	66	72	73	76	78	81	84	85	87	85	83	80	79	76	75	73	74	71	72	72	72	73	72	71	71	70	69	68	65	61	54	93.6
206	6/14	.50 cal.	61	Post-fled.		Cavity	61	62	72	70	75	74	75	77	79	84	87	94	110	100	89	86	86	89	85	91	89	83	84	80	80	80	76	73	74	68	63	56	52	49	111.0
206	6/14	.50 cal.	122	Post-fled.		Cavity	56	51	57	62	65	67	70	72	74	78	82	88	102	91	80	73	69	70	78	86	82	77	80	74	75	74	69	65	64	56	48	41	40	41	103.0
206	6/14	.50 cal.	122	Post-fled.		Base	53	52	57	63	65	67	70	71	74	76	77	77	75	70	67	63	65	66	65	70	68	69	69	69	69	68	67	66	64	62	59	55	49	44	85.2
206	6/14	.50 cal.	15.2	Post-fled.		Base	73	72	77	80	81	79	82	83	85	86	87	85	88	92	95	90	92	93	88	86	87	87	88	89	87	87	88	86	88	90	89	90	90	87	103.6
206	6/14	.50 cal.	15.2	Post-fled.		Cavity	75	67	76	79	78	75	74	76	79	79	82	85	91	97	107	98	88	89	89	93	86	88	84	85	84	80	77	76	73	71	68	66	63	59	108.2
206	6/14	.50 cal.	30.5	Post-fled.		Cavity	76	66	74	80	78	80	80	79	78	82	85	88	92	99	109	99	91	90	91	94	88	87	84	82	84	80	78	77	73	71	69	66	61	57	110.4
206	6/14	.50 cal.	30.5	Post-fled.		Base	73	63	73	77	77	78	81	83	84	88	90	88	91	95	96	87	83	84	83	82	89	87	90	90	88	89	86	85	87	88	87	86	84	80	103.1
206	6/14	.50 cal.	61	Post-fled.		Base	60	56	56	70	66	74	76	79	81	84	85	85	83	84	81	69	72	76	75	79	80	79	83	84	81	77	76	73	74	72	71	69	65	59	94.6
206	6/14	.50 cal.	61	Post-fled.		Cavity	62	57	56	69	65	73	74	77	79	83	84	87	89	95	103	93	85	83	81	82	81	79	76	76	79	74	72	70	66	65	60	55	49	46	104.8
206	6/14	.50 cal.	122	Post-fled.		Cavity	49	50	61	62	68	68	71	73	76	77	81	81	84	89	99	90	81	77	74	74	76	75	70	76	80	72	69	62	57	57	49	44	41	43	100.7
206	6/14	.50 cal.	122	Post-fled.		Base	53	48	61	62	68	68	72	74	77	80	82	80	76	76	74	64	64	69	70	72	71	73	74	73	73	72	71	71	71	67	64	61	57	51	88.7
208	5/11	.50 cal.	15.2	Inactive		Base	72	69	74	83	82	85	84	86	87	89	87	89	92	95	91	91	88	85	85	81	83	82	82	84	84	84	84	85	85	84	83	82	79	74	101.9
208	5/11	.50 cal.	15.2	Inactive		Base	76	78	82	82	83	84	86	88	89	90	88	90	94	97	93	92	91	86	86	83	84	85	83	86	86	86	85	87	87	87	86	83	82	78	103.5
208	5/11	.50 cal.	15.2	Inactive		Base	76		79	83	83	84	85	86	88	89	87	89	92	96	92	90	89	84	85	82	82	84	83	85	84	83	85	84	84	84	81	79	77	73	102.2
208	5/11	.50 cal.	15.2	Inactive		Base	79	77	78	84	83	85	86	87	89	90	88	89	95	97	94	92	90	85	86	83	83	85	84	87	86	85	86	85	88	87	86	82	82	78	103.7
208	5/11	.50 cal.	15.2	Inactive		Base	72	77	81	80	81	84	85	86	88	89	88	89	93	96	92	90	89	84	85	82	82	83	82	85	86	85	84	85	85	84	83	81	79	75	102.4
208	5/11	.50 cal.	15.2	Inactive		Cavity			69	78	75	81	79	77	79	83	90	102	103	94	91	88	92	86	86	88	85	83	79	79	76	72	72	75	73	70	68	66	64	56	106.8
208	5/11	.50 cal.	15.2	Inactive		Cavity	73		70	73	75	76	72	72	77	81	85	98	98	90	87	84	88	82	82	85	81	80	76	76	73	70	70	71	69	66	64	63	60	51	102.4
208	5/11	.50 cal.	15.2	Inactive		Cavity	71		67	76	76	79	80	77	78	85	90	102	103	95	92	89	93	87	86	89	85	84	79	79	77	74	74	76	74	73	69	68	66	61	106.9
208	5/11	.50 cal.	15.2	Inactive		Cavity	72		75	78	73	80	79	78	77	84	90	102	104	94	92	88	92	87	86	89	85	83	79	79	76	74	75	78	75	71	69	67	64	55	107.1
208	5/11	.50 cal.	15.2	Inactive		Cavity	76	72	68	79	75	79	81	79	78	86	91	104	104	96	93	89	94	89	88	90	86	84	80	79	75	75	75	78	76	72	71	69	65	59	108.3
208	5/11	.50 cal.	15.2	Inactive		Cavity	68		78	76	77	79	79	76	78	85	89	102	104	95	92	88	92	88	86	88	84	83	78	79	76	73	75	77	75	71	69	68	65	57	107.0
208	5/11	.50 cal.	30.5	Inactive		Base		60	69	67	76	76	78	81	83	84	84	84	89	89	83	84	78	70	76	75	75	75	76	75	75	75	73	71	70	67	65	62	57	49	95.7
208	5/11	.50 cal.	30.5	Inactive		Base		66	67	73	74	77	79	80	83	84	85	85	91	91	85	87	80	72	76	75	78	79	79	78	77	77	76	73	73	70	67	64	60	53	97.2
208	5/11	.50 cal.	30.5	Inactive		Base	70	71	71	76	76	80	80	84	85	87	88	88	93	93	88	88	82	74	79	77	78	80	80	80	79	79	78	75	75	73	70	68	64	58	99.6
208	5/11	.50 cal.	30.5	Inactive		Base	63	59	65	71	74	77	79	82	84	85	86	86	91	91	85	86	80	72	77	75	78	78	78	78	77	76	75	73	72	70	67	64	59	49	97.6
208	5/11	.50 cal.	30.5	Inactive		Cavity	56	62	70	67	73	74	75	77	79	82	88	96	98	91	84	85	85	80	80	82	76	77	72	72	68	64	63	65	62	63	58	56	53	46	101.7
208	5/11	.50 cal.	30.5	Inactive		Cavity	60	61	67	71	72	75	76	77	79	83	89	98	100	93	86	86	87	82	81	84	79	78	74	75	70	68	66	67	65	63	59	57	53	46	103.3
208	5/11	.50 cal.	30.5	Inactive		Cavity	72	71	67	73	74	78	77	80	82	85	91	100	102	95	88	88	89	84	83	85	80	79	76	76	71	68	68	70	68	64	61	61	58	48	105.6

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc. Overall SEL
							10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	
208	5/11	.50 cal.	30.5		Inactive	Cavity	69	68	67	72	73	76	76	77	78	82	89	98	100	93	87	86	88	83	81	85	79	79	75	75	70	68	67	69	66	65	60	59	56	50	103.7
208	5/11	.50 cal.	61		Inactive	Base	55			49	46	60	55	68	72	73	73	73	75	77	71	67	61	61	58	58	59	58	58	59	59	59	59	59	57	55	52	38	40		82.7
208	5/11	.50 cal.	61		Inactive	Base	56		63	59	66	67	69	73	75	76	77	76	79	81	75	72	67	66	64	64	64	65	65	66	65	66	63	62	61	58	54	41	38		87.0
208	5/11	.50 cal.	61		Inactive	Base	58		61	66	66	70	72	74	77	79	79	79	81	83	77	75	69	66	64	65	66	67	67	67	67	66	65	64	62	59	56	44	40		89.0
208	5/11	.50 cal.	61		Inactive	Base	55		64	61	65	68	71	74	76	78	78	78	81	83	77	74	67	67	65	65	65	66	66	67	67	66	65	64	62	59	55	41	42		88.7
208	5/11	.50 cal.	61		Inactive	Base			55	62	64	66	68	72	75	76	78	78	81	83	76	73	66	65	63	64	63	64	64	65	65	66	65	63	62	59	56	45	40		88.0
208	5/11	.50 cal.	61		Inactive	Base	56		53	56	65	69	71	75	78	77	78	78	81	82	74	71	64	63	64	66	66	69	68	69	70	69	67	65	64	62	58	50	45		88.4
208	5/11	.50 cal.	61		Inactive	Base			62	67	69	71	73	76	78	78	78	79	81	82	76	72	67	65	67	68	68	70	69	70	71	71	68	66	64	62	59	51	43		88.9
208	5/11	.50 cal.	61		Inactive	Base	59		61	66	67	71	74	75	78	78	78	79	81	82	76	71	66	66	67	67	68	71	70	71	71	70	68	67	65	63	59	53	47	34	89.0
208	5/11	.50 cal.	61		Inactive	Cavity	50		60	52		56	57	66	70	74	79	85	88	86	80	73	69	67	68	73	68	61	60	60	56	52	54	60	54	51	48	48	38		91.8
208	5/11	.50 cal.	61		Inactive	Cavity	63	68	63	63	62	65	69	71	74	77	82	89	92	90	84	78	73	71	72	78	74	67	65	67	60	56	56	61	56	54	50	50	40		95.9
208	5/11	.50 cal.	61		Inactive	Cavity	60	56	53	64	66	69	71	73	77	80	84	91	94	92	86	80	76	72	72	78	73	67	67	66	62	55	58	63	57	55	50	46	41		98.3
208	5/11	.50 cal.	61		Inactive	Cavity			61	60	64	65	68	72	75	79	84	91	94	92	87	81	76	73	72	79	74	66	66	67	62	56	57	62	57	55	54	52	44	34	98.1
208	5/11	.50 cal.	61		Inactive	Cavity	57		58	57	58	63	66	70	75	78	84	90	94	92	87	81	75	72	74	80	74	65	66	65	61	58	59	64	59	56	53	49	43		97.9
208	5/11	.50 cal.	61		Inactive	Cavity			50	54	65	68	70	73	77	79	84	90	94	92	86	79	75	72	73	79	75	68	68	69	64	60	58	65	59	58	52	51	45	32	97.7
208	5/11	.50 cal.	61		Inactive	Cavity	50		64	64	66	70	72	74	77	79	84	91	93	91	85	79	74	71	73	78	74	67	67	69	63	57	59	63	60	57	53	49	39		97.3
208	5/11	.50 cal.	61		Inactive	Cavity		58	60	67	68	70	72	74	77	79	84	91	94	91	84	78	74	71	72	77	73	67	67	67	62	57	58	63	58	55	50	46	39	29	97.5
211	5/13	.50 cal.	15.2		Inactive	Cavity	83	77	83	85	82	80	80	81	81	82	87	90	102	101	90	92	91	94	90	93	89	89	87	87	87	87	85	84	85	84	85	75	74	72	106.6
211	5/13	.50 cal.	15.2		Inactive	Base	81	75	80	83	83	84	84	83	82	86	89	89	86	89	88	85	84	84	83	85	85	85	85	84	84	85	85	84	84	83	83	81	79	75	99.9
211	5/13	.50 cal.	30.5		Inactive	Cavity	85	76	76	80	79	78	77	76	76	79	83	83	93	92	82	84	85	86	83	87	84	82	82	83	81	81	79	78	79	78	79	72	72	70	99.2
211	5/13	.50 cal.	30.5		Inactive	Base	71	63	67	75	74	77	77	78	78	78	80	78	78	73	74	72	73	76	78	81	81	81	82	81	81	81	80	79	78	78	76	74	70	67	93.1
211	5/13	.50 cal.	30.5		Inactive	Cavity	78	71	72	76	72	72	71	70	68	71	71	74	88	89	77	79	80	81	81	84	81	79	76	77	78	76	74	73	73	72	73	67	66	65	94.6
211	5/13	.50 cal.	30.5		Inactive	Base	66	61	65	71	71	75	76	79	79	80	77	75	72	74	68	67	70	75	77	77	79	79	78	78	78	78	77	76	75	73	71	66	62	59	90.9
218	5/26	.50 cal.	15.2		Post-fled.	Base	60	65	69	80	77	86	86	86	88	90	91	92	91	98	100	99	94	92	90	88	90	89	89	88	89	89	89	88	87	88	87	85	83	80	106.5
218	5/26	.50 cal.	15.2		Post-fled.	Base	81	75	76	85	81	86	87	87	88	91	92	94	90	99	101	99	93	93	91	90	90	91	90	92	91	91	90	89	89	89	88	87	85	82	107.7
218	5/26	.50 cal.	15.2		Post-fled.	Cavity	6	78	69	71	82	74	83	83	85	85	90	90	99	109	105	96	92	91	96	91	92	87	90	85	85	86	83	85	83	78	76	76	73	69	111.4
218	5/26	.50 cal.	15.2		Post-fled.	Cavity	6	74	72	73	83	78	83	84	85	85	90	92	99	110	106	96	93	92	97	92	92	87	90	85	86	86	84	83	82	79	78	75	71	69	112.4
218	5/26	.50 cal.	30.5		Post-fled.	Cavity	66	67	68	75	75	81	83	85	85	88	91	99	109	106	94	89	88	94	90	87	87	91	85	87	87	83	85	80	76	75	72	69	65	58	111.6
218	5/26	.50 cal.	30.5		Post-fled.	Cavity	64		65	76	72	81	85	85	85	88	91	99	109	106	94	88	87	94	90	86	87	91	85	87	88	84	84	79	76	75	73	70	66	59	111.6
218	5/26	.50 cal.	30.5		Post-fled.	Cavity	72		71	78	77	82	85	85	86	88	91	99	109	107	95	89	88	95	90	86	87	91	86	88	89	85	84	79	76	76	72	70	66	58	112.0
218	5/26	.50 cal.	30.5		Post-fled.	Base	71	65	66	74	73	80	82	85	87	90	93	92	93	95	93	87	82	86	89	88	87	87	89	90	90	88	86	84	85	84	83	79	77	73	103.3
218	5/26	.50 cal.	30.5		Post-fled.	Base	63	60	73	76	74	82	84	85	88	90	93	92	92	95	94	87	81	84	88	86	87	87	88	89	90	88	87	84	84	83	81	79	76	72	103.2
218	5/26	.50 cal.	30.5		Post-fled.	Base	75	71	71	79	76	82	84	86	88	90	93	93	93	95	94	87	82	84	87	88	87	88	89	89	92	89	88	85	85	84	82	79	77	72	103.7
227	4/29	.50 cal.	61	0		Base	63	59	59	72	67	76	78	80	83	85	88	89	88	83	75	69	66	72	74	74	75	75	76	76	76	74	72	70	70	69	67	62	59	56	95.4
227	4/29	.50 cal.	61	0		Base	63	58	60	70	70	75	77	80	83	85	89	90	88	82	75	69	68	72	75	75	76	76	77	77	76	78	76	74	73	71	69	66	61	57	95.8
227	4/29	.50 cal.	61	0		Base	62	61	58	68	68	73	74	77	81	83	86	87	85	80	73	67	67	70	71	71	74	75	76	75	73	74	72	71	70	68	66	62	59	56	93.1
227	4/29	.50 cal.	61	0		Base	56	57	60	69	67	73	75	78	80	83	87	87	86	80	73	68	67	69	72	71	75	76	78	77	77	77	75	73	72	71	67	63	59	55	93.7
227	6/3	.50 cal.	15.2		Post-fled.	Base	74	76	83	82	85	86	88	90	91	93	93	91	94	99	97	91	92	83	86	86	86	87	86	88	89	91	92	91	92	93	93	93	93	89	106.7
227	6/3	.50 cal.	15.2		Post-fled.	Base		76	85	84	84	87	89	90	92	93	94	91	94	100	98	92	93	83	85	85	86	86	86	89	90	91	90	92	93	94	95	94	94	90	107.4
227	6/3	.50 cal.	15.2		Post-fled.	Cavity	77	82	86	83	85	83	86	86	88	89	94	101	119	105	95	96	94	103	93	98	92	90	91	88	90	88	88	84	83	82	77	74	69	67	119.5
227	6/3	.50 cal.	15.2		Post-fled.	Cavity	72	68	80	79	81	82	80	85	85	87	93	100	118	104	94	96	93	104	92	97	91	90	90	87	88	87	86	83	82	79	76	73	69	64	118.9
227	6/3	.50 cal.	30.5		Post-fled.	Base	68	76	78	80	80	84	87	89	91	94	93	95	97	101	99	93	89	83	85	87	85	86	85	87	88	88	88	87	87	87	85	83	81	76	106.6
227	6/3	.50 cal.	30.5		Post-fled.	Base	72	77	76	81	82	84	86	89	91	94	93	95	97	101	98	92	87	83	85	87	86	85	85	88	88	88	87	85	85	84	84	84	81	76	106.4
227	6/3	.50 cal.	30.5		Post-fled.	Cavity	75	83	87	85	81	83	84	87	88	91	95	103	120	106	97	96	95	104	94	100	93	93	92	90	92	88	89	86	84	82	78	75	71	67	120.3
227	6/3	.50 cal.	30.5		Post-fled.	Cavity	72	88	82	86	83	79	82	87	87	91	95	103	118	106	97	95	95	103	93	99	92	93	92	90	91	87	86	82	80	77	74	71	67	62	118.6
227	6/3	.50 cal.	61		Post-fled.	Base	62		66	70	70	71	75	78	80	82	82	81	82	84	78	70	68	71	75	72	72	74	73	73	75	75	73	73	72	71	68	66	62	52	91.7

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
227	6/3	.50 cal.	61	Post-fled.		Base	62			61	65	65	66	70	73	74	74	75	75	76	70	62	61	66	67	62	66	65	64	66	65	64	65	64	60	60	57	53	49	44	84.0
227	6/3	.50 cal.	61	Post-fled.		Cavity			62	72	68	74	77	78	80	83	87	96	111	98	86	80	80	78	82	90	80	81	81	81	90	85	88	78	76	75	70	65	63	58	111.1
227	6/3	.50 cal.	61	Post-fled.		Cavity	65		68	66		68	71	71	75	78	81	89	104	91	80	73	74	71	75	82	71	71	67	73	75	74	76	66	64	62	57	53	50	43	104.1
228	4/26	.50 cal.	122	1		Base	41	45	60	57	66	69	72	75	78	79	79	75	73	72	67	63	66	63	68	69	67	69	69	68	67	66	63	61	58	55	51	46	41	39	86.2
228	4/26	.50 cal.	122	1		Base	56	57	67	68	73	76	79	82	84	86	86	82	80	79	74	70	71	69	73	75	75	76	76	75	75	74	70	67	66	62	58	52	49	48	93.0
228	4/29	.50 cal.	91.5	2	3.7	Base	61	56	62	65	66	72	74	77	79	80	81	77	71	63	64	63	66	71	74	77	76	77	77	77	75	73	70	69	66	64	61	57	51	45	89.2
228	4/29	.50 cal.	91.5	2	3.7	Base	52	54	55	65	61	67	70	72	74	75	76	72	66	58	59	58	60	66	69	72	71	73	74	71	70	68	65	64	62	60	56	52	46	41	84.4
228	4/29	.50 cal.	91.5	2	3.7	Base	53	50	58	59	65	66	69	71	74	75	75	72	66	58	59	57	61	65	69	71	71	71	73	71	68	67	66	66	63	60	57	53	48	41	83.9
228	4/29	.50 cal.	91.5	2	3.7	Base	50	50	51	62	65	72	73	77	79	80	80	77	72	63	64	62	65	70	73	74	75	78	79	77	73	72	70	69	67	64	62	58	51	44	89.0
228	4/29	.50 cal.	91.5	2	3.7	Base	57	54	55	61	60	67	70	72	74	75	76	72	68	60	61	58	60	65	69	71	72	74	75	72	70	66	66	66	64	62	58	54	48	41	84.8
231	5/11	.50 cal.	15.2	Inactive		Cavity	77	70	70	80	76	83	81	84	82	83	87	90	93	104	110	108	103	95	94	98	93	92	91	91	89	86	83	82	80	78	74	73	70	65	113.6
231	5/11	.50 cal.	15.2	Inactive		Cavity	73	69	72	80	77	83	83	84	85	84	88	93	94	104	110	109	104	96	94	100	92	93	92	92	90	87	84	82	79	78	76	74	71	65	114.2
231	5/11	.50 cal.	15.2	Inactive		Cavity	78	72	71	82	79	85	84	86	84	85	89	92	95	106	112	111	105	98	96	101	93	95	93	92	91	88	85	83	82	80	76	75	73	66	115.7
231	5/11	.50 cal.	15.2	Inactive		Base	84	77	79	88	83	89	89	91	91	93	95	95	99	99	95	98	95	92	90	90	90	91	91	90	93	93	92	92	92	91	89	87	84	80	107.9
231	5/11	.50 cal.	15.2	Inactive		Base	82	76	81	88	84	89	89	92	92	93	96	96	98	99	95	98	95	92	90	91	89	90	91	91	93	95	93	94	94	94	92	90	88	83	108.5
231	5/11	.50 cal.	15.2	Inactive		Base	86	81	80	89	86	91	91	93	94	95	97	97	100	101	97	100	97	95	94	94	91	92	94	92	94	94	95	94	95	93	92	91	88	84	109.9
231	5/11	.50 cal.	30.5	Inactive		Base	76	72	73	81	78	85	86	89	90	92	96	98	96	94	91	92	86	83	85	85	86	88	89	90	89	91	90	88	88	86	84	82	79	74	105.1
231	5/11	.50 cal.	30.5	Inactive		Base	76	77	69	80	82	85	85	89	91	93	96	99	97	95	92	93	87	84	86	86	88	89	88	89	88	89	88	87	87	86	84	82	78	72	105.7
231	5/11	.50 cal.	30.5	Inactive		Base	73	71	71	76	78	80	81	85	86	88	92	94	91	89	86	87	82	80	82	82	82	85	87	88	87	89	88	88	86	85	82	78	77	72	101.6
231	5/11	.50 cal.	30.5	Inactive		Cavity	73	67	68	76	74	79	79	83	81	84	91	92	92	101	106	104	97	91	90	94	90	88	89	87	84	80	78	75	72	73	70	70	67	59	110.0
231	5/11	.50 cal.	30.5	Inactive		Cavity	70	71	64	75	76	80	79	84	83	84	90	92	93	101	107	105	97	92	91	95	91	89	90	87	85	82	79	76	73	73	71	71	68	60	110.6
231	5/11	.50 cal.	30.5	Inactive		Cavity	63	64	64	69	73	74	76	80	79	81	87	88	89	97	102	100	93	87	87	90	86	84	85	82	80	76	74	72	68	69	66	64	62	55	106.0
231	5/11	.50 cal.	61	Inactive		Cavity	63	62	59	73	71	78	78	81	83	86	87	88	90	95	98	95	89	85	82	80	80	78	82	85	83	77	75	69	66	68	60	61	56	55	102.4
231	5/11	.50 cal.	61	Inactive		Cavity	54	55	60	66	68	69	72	76	77	80	82	82	84	89	92	90	83	79	77	76	74	74	79	79	75	71	68	62	60	65	57	57	52	51	96.9
231	5/11	.50 cal.	61	Inactive		Base	64	64	61	73	72	78	78	82	83	86	87	87	86	82	75	71	72	76	76	78	79	79	79	80	79	78	78	75	74	72	69	64	58	55	95.2
231	5/11	.50 cal.	61	Inactive		Base	55	56	60	66	68	69	73	76	78	80	82	82	80	76	69	67	66	68	70	72	73	72	72	71	71	72	74	72	70	68	65	61	56	52	89.4
236	5/11	.50 cal.	15.2	Inactive		Base	83	73	80	88	87	87	90	91	91	93	95	93	96	98	99	101	94	94	87	89	91	90	86	86	87	89	91	91	92	94	93	90	88	84	108.0
236	5/11	.50 cal.	15.2	Inactive		Base	64	68	80	79	84	84	85	86	87	89	91	89	92	94	95	97	91	91	85	85	87	88	82	83	85	87	87	86	87	90	87	86	84	80	104.2
236	5/11	.50 cal.	15.2	Inactive		Base	79	77	84	86	89	88	91	92	94	95	96	95	98	99	101	102	96	96	91	91	90	90	87	87	88	89	89	90	91	92	91	90	89	85	109.2
236	5/11	.50 cal.	15.2	Inactive		Base	74	72	78	84	84	86	87	88	90	92	94	92	90	98	101	96	93	95	86	83	88	87	85	85	85	86	85	86	86	86	84	83	82	79	106.2
236	5/11	.50 cal.	15.2	Inactive		Cavity	76	68	72	79	80	80	83	84	84	84	87	91	106	110	103	98	94	96	97	91	93	86	88	84	82	81	80	78	78	75	73	70	67	66	112.6
236	5/11	.50 cal.	15.2	Inactive		Cavity	57	64	73	72	78	78	79	80	80	79	83	87	102	106	100	94	90	93	93	87	90	83	85	82	81	79	78	76	75	73	70	66	62	62	109.0
236	5/11	.50 cal.	15.2	Inactive		Cavity	73	69	77	79	82	81	84	85	85	83	88	92	107	111	105	99	96	98	98	91	95	88	90	87	86	85	84	82	80	77	74	71	68	67	114.1
236	5/11	.50 cal.	15.2	Inactive		Cavity	67	67	74	78	79	79	81	80	80	79	85	88	103	108	101	95	93	95	95	87	92	85	85	83	81	80	78	76	74	73	71	68	66	63	110.4
236	5/11	.50 cal.	30.5	Inactive		Base	67	65	70	76	78	80	83	85	87	88	90	91	92	95	95	93	89	88	85	81	81	81	77	78	78	79	79	78	78	77	75	72	68	62	102.2
236	5/11	.50 cal.	30.5	Inactive		Base	64	62	71	73	79	79	83	85	87	88	90	92	93	95	95	93	91	89	85	81	81	81	78	77	78	80	78	78	77	76	74	71	67	60	102.6
236	5/11	.50 cal.	30.5	Inactive		Base	73	68	75	79	81	82	85	88	89	91	93	94	95	99	98	97	92	92	88	84	83	84	82	81	83	84	83	83	83	81	79	76	73	66	105.6
236	5/11	.50 cal.	30.5	Inactive		Cavity	67	66	70	74	76	78	81	82	83	83	85	93	101	107	103	96	91	92	93	86	89	81	83	78	76	74	73	72	74	69	67	63	58	56	110.0
236	5/11	.50 cal.	30.5	Inactive		Cavity	68	63	72	74	78	78	81	82	84	84	87	93	100	107	103	96	93	94	93	85	90	84	83	80	77	74	74	73	74	69	67	62	57	54	110.0
236	5/11	.50 cal.	30.5	Inactive		Cavity	74	68	75	79	80	81	84	86	86	86	87	94	103	111	105	98	94	96	96	88	93	86	86	82	80	78	77	76	77	72	71	67	62	59	112.8
236	5/11	.50 cal.	61	Inactive		Cavity	75	79	86	85	78	80	78	79	81	84	87	91	97	101	97	93	86	82	76	72	72	72	68	65	64	69	65	59	58	54	52	49	52	53	104.5
236	5/11	.50 cal.	61	Inactive		Cavity	75	82	88	93	84	80	81	81	83	87	91	95	101	105	102	97	90	87	79	76	77	76	71	66	64	69	67	63	62	58	56	53	54	55	108.5
236	5/11	.50 cal.	61	Inactive		Cavity	73	78	86	76	72	78	79	80	82	86	90	93	99	103	99	95	88	82	74	70	70	68	65	61	61	68	65	62	60	57	54	51	52	53	106.4
236	5/11	.50 cal.	61	Inactive		Cavity	69	77	74	68	71	74	74	78	80	84	87	91	97	102	99	95	88	84	75	78	77	76	68	67	64	71	66	62	61	58	56	52	52	53	105.5
236	5/11	.50 cal.	61	Inactive		Base	71	73	66	72	69	73	76	77	80	82	84	83	82	85	85	79	77	73	69	69	66	68	67	67	70	70	68	67	64	61	57	53	53	54	92.7
236	5/11	.50 cal.	61	Inactive		Base	77	80	78	78	74	78	79	81	82	84	85	85	83	86	88	83	79	76	71	68	68	69	71	71	72	72	71	70	67	65	61	57	54	54	95.1

Col.	Date	Event Type	Event Dist. (m)	RCW Resp.	Rec, Time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc. Overall SEL
							10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	
236	5/11	.50 cal.	61	Inactive		Base	77	72	75	75	72	79	79	80	81	83	85	84	82	82	81	77	73	71	68	68	66	69	70	70	70	70	69	68	66	64	60	56	53	54	92.8
236	5/11	.50 cal.	61	Inactive		Base	63	64	62	69	72	76	75	78	80	82	84	84	82	84	85	79	75	73	65	67	67	69	68	69	68	68	67	66	64	62	59	54	51	51	92.6
271	6/3	.50 cal.	15.2	Post-fled.		Base	73	70	85	81	85	86	87	88	90	92	93	93	88	92	96	97	88	87	88	89	89	89	89	93	92	92	91	91	92	93	93	94	94	91	106.5
271	6/3	.50 cal.	15.2	Post-fled.		Base	70	78	82	84	84	87	87	87	89	91	91	91	86	90	94	96	88	86	87	87	88	88	88	91	92	92	93	92	92	93	94	94	93	89	105.8
271	6/3	.50 cal.	15.2	Post-fled.		Cavity	74	72	80	78	80	87	87	88	88	87	91	97	117	110	95	95	92	106	94	99	93	93	91	88	85	82	79	76	76	73	69	68	63	54	118.6
271	6/3	.50 cal.	15.2	Post-fled.		Cavity	77		80	82	80	85	86	87	88	86	91	97	117	110	95	94	91	105	93	99	92	93	89	86	84	81	78	75	74	71	68	66	62	51	118.0
271	6/3	.50 cal.	30.5	Post-fled.		Cavity	71	72	81	76	83	79	82	84	84	83	88	94	114	107	93	91	89	98	90	92	88	84	83	79	76	73	72	69	69	64	62	60	54	45	115.1
271	6/3	.50 cal.	30.5	Post-fled.		Cavity	73	73	80	82	81	80	83	85	85	85	89	94	115	107	94	91	89	98	90	92	87	84	83	78	76	72	72	68	67	64	62	58	54	46	115.5
271	6/3	.50 cal.	30.5	Post-fled.		Base	57	57	74	70	75	79	80	83	85	87	90	89	85	88	91	87	77	80	81	82	81	82	84	84	84	84	82	83	84	83	83	83	83	78	99.5
271	6/3	.50 cal.	30.5	Post-fled.		Base		66	72	73	74	79	81	83	85	87	89	89	85	88	91	88	78	79	81	83	82	83	87	86	85	85	85	86	86	86	85	84	84	79	100.2
271	6/3	.50 cal.	61	Post-fled.		Cavity	66	72	72	75	76	79	80	81	82	84	89	94	110	105	91	86	85	86	86	91	81	77	73	75	77	70	69	64	66	61	60	55	51	36	111.5
271	6/3	.50 cal.	61	Post-fled.		Cavity	68	69	75	74	76	80	82	82	83	86	89	94	111	105	91	86	85	87	86	90	81	77	73	77	80	73	72	67	69	63	62	57	52	39	112.3
271	6/3	.50 cal.	61	Post-fled.		Base	66		60	67	68	73	76	79	81	84	86	85	82	82	81	77	69	74	75	76	76	77	79	83	82	81	80	79	78	76	74	72	69	63	94.5
271	6/3	.50 cal.	61	Post-fled.		Base	66		64	70	71	74	78	79	82	85	87	86	81	82	81	76	69	74	76	78	78	78	79	82	82	82	80	80	78	76	75	74	71	65	95.0
294	6/21	.50 cal.	15.2	Post-fled.		Base	71	70	80	76	82	82	83	86	87	87	89	87	90	94	94	86	88	87	84	89	88	90	89	91	91	89	90	90	91	90	90	90	89	86	104.0
294	6/21	.50 cal.	15.2	Post-fled.		Base	66	76	79	81	82	83	85	86	87	88	90	87	90	94	94	88	89	87	84	87	88	90	90	91	92	90	89	90	92	92	93	93	93	91	105.0
294	6/21	.50 cal.	15.2	Post-fled.		Cavity	73	71	83	75	79	73	77	80	82	80	88	92	105	108	95	90	88	96	93	94	99	96	90	92	88	87	85	83	81	84	81	76	72	69	111.3
294	6/21	.50 cal.	15.2	Post-fled.		Cavity	67	78	81	80	79	75	77	81	82	82	89	92	106	109	96	91	90	97	92	95	99	97	91	93	89	88	86	83	83	83	81	77	74	71	112.0
294	6/21	.50 cal.	30.5	Post-fled.		Cavity	65	69	79	73	79	78	77	77	80	83	86	91	105	106	90	84	84	93	90	93	99	95	88	91	87	84	84	81	78	80	77	72	66	62	109.6
294	6/21	.50 cal.	30.5	Post-fled.		Cavity	67	80	74	80	80	79	79	78	81	84	88	93	105	106	91	86	84	92	90	93	100	96	89	92	87	84	85	82	80	82	79	73	68	64	109.9
294	6/21	.50 cal.	30.5	Post-fled.		Base	60	62	75	69	78	81	83	85	87	89	90	90	92	92	90	84	85	83	84	86	85	83	86	85	83	84	84	85	85	85	83	82	80	75	101.1
294	6/21	.50 cal.	30.5	Post-fled.		Base	59	73	69	76	78	81	84	85	87	89	90	90	92	93	90	84	85	83	83	86	84	85	86	86	86	87	86	86	86	85	84	82	80	74	101.5
294	6/21	.50 cal.	61	Post-fled.		Base	58	55	67	72	74	78	80	82	85	87	87	88	88	88	83	78	77	79	78	79	79	79	80	80	79	78	78	78	76	75	73	71	68	61	96.7
294	6/21	.50 cal.	61	Post-fled.		Base	61	53	64	72	73	77	80	82	84	85	86	87	87	87	83	78	78	79	78	78	78	80	79	82	82	79	79	77	76	75	73	71	67	61	96.2
294	6/21	.50 cal.	61	Post-fled.		Cavity	62	63	71	74	75	77	78	79	80	82	86	92	103	104	90	82	81	84	85	88	94	92	84	90	85	84	81	79	76	75	72	66	64	59	107.5
294	6/21	.50 cal.	61	Post-fled.		Cavity	64	62	67	75	72	77	77	79	79	81	86	91	102	103	89	82	81	83	84	87	95	93	86	91	86	84	82	80	77	77	75	70	67	61	106.8
294	6/21	.50 cal.	91.5	Post-fled.		Base	59	52	55	68	65	71	74	76	78	80	77	75	78	77	70	70	68	72	72	72	72	73	73	73	73	73	71	71	70	69	66	63	58	50	88.4
294	6/21	.50 cal.	91.5	Post-fled.		Cavity	60	52	56	67	64	71	73	75	78	81	83	86	99	100	85	82	75	76	76	83	90	85	78	82	74	73	74	70	64	69	65	55	47	45	103.2
294	6/21	.50 cal.	122	Post-fled.		Cavity	57	48	55	65	65	70	72	74	76	80	82	87	94	96	84	75	72	72	71	79	87	85	77	79	72	71	74	68	60	63	59	47	43	45	99.3
294	6/21	.50 cal.	122	Post-fled.		Cavity	55	52	57	66	63	70	72	74	76	80	83	87	95	96	83	76	72	72	71	79	89	89	80	81	74	74	74	68	60	66	62	50	45	45	100.2
294	6/21	.50 cal.	122	Post-fled.		Cavity	56	49	55	66	65	70	73	75	76	78	76	76	75	73	69	62	64	67	69	70	70	72	71	72	71	71	69	68	67	64	61	57	50	44	86.4
294	6/21	.50 cal.	122	Post-fled.		Cavity	50	50	58	66	64	71	73	75	76	78	77	77	77	75	72	63	64	67	70	71	72	73	72	72	72	71	70	69	67	65	62	58	51	44	87.1

Table D 5. Summary data for passive M-16 live fire noise on Fort Stewart, GA.

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azimuth re. DOF	RCW Response	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic Flat	A
3	5/17/99	I-8	M-16		90	0	0	0	Base	71.5	63.2
3	5/17/99	I-8	M-16		90	0	0	0	Base	72.0	63.6
3	5/17/99	I-8	M-16		90	0	0	0	Base	75.2	66.5
3	5/17/99	I-8	M-16		90	0	0	0	Base	73.9	65.7
3	5/17/99	I-8	M-16		90	0	0	0	Base	70.1	61.5
25	5/5/99	I-2	M-16		20	0	0	0	Base	66.3	63.2
25	5/5/99	I-2	M-16		20	0	0	0	Base	74.7	72.2
25	5/5/99	I-2	M-16		20	0	0	0	Base	67.8	63.7
25	5/5/99	I-2	M-16		20	0	0	0	Base	72.1	69.8
25	5/5/99	I-2	M-16		20	0	0	0	Base	68.1	65.6
25	5/5/99	I-2	M-16		20	0	0	0	Base	68.7	65.8
25	5/5/99	I-2	.50 cal		0	0	0	0	Base	76.0	50.2
25	5/5/99	I-2	M-16		20	0	0	0	Base	67.6	63.6
25	5/5/99	I-2	M-16		20	0	0	0	Base	71.4	69.5
25	5/5/99	I-9	.50 cal		0	0	0	0	Base	74.9	50.2
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	68.3	61.7
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	67.2	61.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	68.6	61.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	68.0	62.5
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	69.4	62.1
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	71.3	64.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	76.2	70.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	69.2	62.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	75.2	69.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	70.3	66.0
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	68.3	62.0
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	69.6	64.7
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	77.3	73.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	74.6	67.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	69.7	65.3
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	71.0	64.1
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	72.8	66.6
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	71.0	64.2
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	67.7	61.5
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	82.8	82.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	78.8	78.7
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	72.8	64.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	71.7	62.5
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	69.6	62.3
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	83.9	84.0
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	86.0	86.3
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	72.3	69.3
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	70.4	64.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	73.2	67.2
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	74.6	74.0
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	70.2	63.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	71.3	66.1
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	72.4	68.5
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	75.5	69.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	70.9	64.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	81.9	82.2
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	70.6	64.7

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azimuth re. DOF	RCW Response	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic Flat	A
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	68.3	61.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	75.3	68.7
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	69.9	63.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	67.5	60.1
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	68.5	61.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	69.7	61.0
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	84.2	83.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	77.5	72.6
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	75.8	70.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	73.8	66.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	85.1	85.5
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	79.4	76.2
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	76.1	70.6
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	75.9	70.5
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	75.0	69.6
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	73.9	67.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	76.0	68.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	73.6	67.7
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	67.6	62.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	73.4	71.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	75.8	74.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	75.1	68.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	74.4	69.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	78.8	76.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	73.9	68.2
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	72.0	65.5
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	74.5	69.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	71.5	66.1
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	76.0	71.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	74.4	73.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	77.0	74.5
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	74.1	69.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	73.0	66.0
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	71.2	70.3
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	71.4	65.6
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	73.1	67.0
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	76.7	69.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	74.7	67.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	76.5	74.5
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	73.3	65.7
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	69.0	60.7
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	67.3	57.6
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	67.0	60.5
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	70.2	60.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	78.4	72.7
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	78.0	75.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	74.8	72.2
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	72.6	67.0
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	70.3	65.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	72.1	67.5
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	70.1	65.8
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	72.1	67.3
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	77.2	74.7

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azimuth re. DOF	RCW Response	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic	
										Flat	A
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	72.0	65.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	70.3	63.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	72.3	66.9
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	73.2	67.4
103	5/12/99	N-2	M-16	20-434	280	0	0	0	Base	76.4	71.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.4	61.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.7	71.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.6	63.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	77.5	74.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.5	63.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	78.3	75.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.2	67.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.0	66.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.1	62.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.8	63.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.9	64.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.9	66.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.4	63.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.6	73.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.7	73.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.5	71.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.7	71.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.4	63.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.0	67.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.4	73.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	77.8	72.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.9	64.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.0	63.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.0	62.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.5	62.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.5	64.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.3	67.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.8	66.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.6	66.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.9	64.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.3	63.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.7	66.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.5	63.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.4	62.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.7	62.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	79.1	79.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	83.4	83.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.6	68.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	85.0	85.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.4	66.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.0	68.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.1	68.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.0	70.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.6	69.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.9	75.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.2	70.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.0	72.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	80.5	81.3

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azimuth re. DOF	RCW Response	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic Flat	A
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.1	65.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	79.8	79.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.0	59.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.2	63.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	80.8	80.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	78.2	78.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	69.9	66.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.9	63.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.3	61.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.1	64.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.0	64.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.6	64.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	69.2	69.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.2	63.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	78.1	74.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.7	64.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.2	63.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.0	61.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.0	66.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.9	66.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.2	64.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	81.0	80.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.1	65.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.9	66.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	81.8	81.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.6	62.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.4	63.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.1	64.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.9	62.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.6	64.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.4	65.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	84.9	85.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.2	62.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.6	64.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	80.6	79.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.8	64.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.5	62.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	84.4	84.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.0	68.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.8	68.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.7	65.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	85.7	86.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.9	68.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.7	66.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	82.1	82.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.0	71.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.4	69.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	81.4	82.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	82.5	83.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	83.0	83.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	82.6	83.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.0	71.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.1	66.8

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azimuth re. DOF	RCW Response	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic Flat	A
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.7	66.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.2	70.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.7	72.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.3	64.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.8	66.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.4	66.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.1	68.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.4	64.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.2	66.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.3	63.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	77.2	72.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.3	64.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.3	63.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	77.0	67.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	81.3	82.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.8	70.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.1	67.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.3	66.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.9	74.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.4	64.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.6	64.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	80.5	80.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	77.5	71.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.0	61.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.3	61.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.1	65.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.6	70.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.5	70.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.1	65.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.2	63.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.7	69.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.0	72.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.7	70.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.6	62.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	85.0	85.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	78.5	77.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.3	65.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	82.2	82.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.5	67.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.6	64.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.7	74.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.8	62.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	83.3	84.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.8	70.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.7	72.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	77.5	76.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.1	69.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.4	65.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.2	62.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.8	75.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.2	66.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.4	75.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.3	68.5

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azimuth re. DOF	RCW Response	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic Flat	A
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	82.1	82.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	78.9	78.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.5	62.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.5	63.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	78.2	77.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.7	69.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.5	67.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.5	66.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.1	66.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.2	64.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	84.4	84.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	82.8	83.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.5	74.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.5	69.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.8	68.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.5	67.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	77.8	75.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.8	68.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.8	76.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	63.5	55.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	66.9	56.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.0	63.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.2	65.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.2	63.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.9	76.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.1	62.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.6	73.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.0	65.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.2	63.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.0	63.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.4	66.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.1	67.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.7	67.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.8	69.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.1	64.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.6	64.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	83.8	84.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.0	74.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	77.7	77.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	82.0	81.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.9	64.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.1	63.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	82.9	83.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.2	68.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.3	67.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.8	70.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.6	63.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.4	68.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.5	70.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	68.6	57.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.2	68.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.1	72.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.0	69.9

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azimuth re. DOF	RCW Response	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic Flat	A
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.6	73.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.1	64.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	78.6	78.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.1	61.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	82.2	82.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	74.6	73.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	80.7	80.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	83.7	83.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.4	69.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.6	62.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.8	65.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.6	70.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	76.9	75.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	69.7	64.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.4	66.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.3	65.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	69.2	58.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	69.1	57.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.9	67.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.7	63.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.7	70.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	75.0	66.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	68.8	60.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.8	71.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.4	71.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.3	67.7
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.2	64.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	78.0	77.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.8	67.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.4	67.2
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.6	70.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	87.2	87.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.2	68.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.4	63.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	80.9	81.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	83.9	84.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	78.2	78.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.6	69.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.9	69.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.6	69.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.4	67.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	81.5	81.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.3	68.5
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	69.6	59.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	83.7	84.1
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	77.0	74.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.8	66.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.2	65.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	68.3	61.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.9	65.9
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.0	62.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.4	69.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	69.6	61.9

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azimuth re. DOF	RCW Response	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic	
										Flat	A
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.0	68.6
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	73.2	65.3
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	70.8	65.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	72.7	70.0
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	71.5	63.8
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	77.3	77.4
103	5/13/99	N-3	M-16	20-434	280	0	0	0	Base	68.4	60.1
103	5/17/99	N-7	M-16	20-434	280	2	0	0	Base	81.4	80.7
103	5/17/99	N-7	M-16	20-434	280	2	0	0	Base	84.0	84.4
103	5/17/99	N-7	M-16	20-434	280	2	0	0	Base	79.1	75.2
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	72.2	68.8
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	76.3	70.3
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	72.6	66.4
103	5/17/99	N-7	M-16	20-434	280	2	0	0	Base	76.3	71.0
103	5/17/99	N-7	M-16	20-434	280	2	0	0	Base	79.0	76.4
103	5/17/99	N-7	M-16	20-434	280	2	0	0	Base	74.0	73.1
103	5/17/99	N-7	M-16	20-434	280	2	0	0	Base	78.3	73.4
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	73.5	69.7
103	5/17/99	N-7	M-16	20-434	280	0	0	0	Base	83.4	82.8
103	5/17/99	N-7	M-16	20-434	280	0	0	0	Base	77.2	73.2
103	5/17/99	N-7	M-16	20-434	280	0	0	0	Base	74.7	70.8
103	5/17/99	N-7	M-16	20-434	280	0	0	0	Base	75.7	72.4
103	5/17/99	N-7	M-16	20-434	280	0	0	0	Base	74.5	71.1
103	5/17/99	N-7	M-16	20-434	280	0	0	0	Base	71.7	67.7
103	5/17/99	N-7	M-16	20-434	280	0	0	0	Base	84.8	85.3
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	76.6	72.9
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	73.1	69.7
103	5/17/99	N-7	M-16	20-434	280	0	0	0	Base	87.9	88.1
103	5/17/99	N-7	M-16	20-434	280	0	0	0	Base	75.2	69.5
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	87.4	87.8
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	84.0	83.8
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	73.5	68.9
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	72.6	68.4
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	78.2	74.1
103	5/17/99	N-7	M-16	20-434	280	0	0	0	Base	86.0	86.4
103	5/17/99	N-7	M-16	20-434	280	0	0	0	Base	87.9	88.1
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	79.2	75.9
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	75.4	74.0
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	74.3	70.6
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	74.1	68.8
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	83.2	83.2
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	83.4	83.1
103	5/17/99	N-7	M-16	20-434	280	0	0	0	Base	76.3	73.3
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	73.8	68.4
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	77.9	74.3
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	75.6	71.2
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	71.6	64.0
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	73.8	70.6
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	70.4	64.8
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	72.7	66.0
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	79.6	79.2
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	75.8	70.4
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	72.5	65.9

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azimuth re. DOF	RCW Response	Recovery time (min)	Remarks	Mic Pos.	SEL (dB) at mic	
										Flat	A
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	75.8	69.2
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	80.3	79.3
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	80.7	79.0
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	79.2	73.7
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	76.7	71.7
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	76.8	73.0
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	72.7	70.2
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	76.2	71.1
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	72.8	68.2
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	77.3	72.7
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	72.9	68.3
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	75.5	70.1
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	76.7	75.4
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	78.6	78.5
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	70.2	65.9
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	73.3	67.0
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	72.5	66.7
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	77.6	77.2
103	5/17/99	N-3	M-16	20-434	280	0	0	0	Base	70.5	66.0

Table D 6. Representative unweighted noise spectra for passive M-16 live fire on Fort Stewart, GA.

Col.	Date	Event	Event	Mic	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc.
		Type	Dist. (m)	Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Overall SEL
3	5/17	M-16	500	Base	50	48	50	48	54	59	62	62	66	62	59	55	53	49	50	55	54	57	56	53	56	53	50	48	49	49	44	41	51	38	30	26	23	6	71.5
3	5/17	M-16	500	Base	50	50	55	54	59	60	63	62	65	62	61	56	51	50	52	55	56	57	56	55	55	54	51	49	48	48	41	42	51	40	34	27	22	9	72.0
3	5/17	M-16	500	Base	46	48	53	54	60	62	64	67	69	67	64	60	53	53	54	55	58	60	59	57	59	58	55	53	51	49	43	41	50	37	30	24	21	11	75.2
3	5/17	M-16	500	Base	47	51	49	52	57	59	62	66	68	65	63	60	52	51	54	55	57	57	57	57	58	56	53	51	54	52	47	48	48	37	29	25	24	12	73.9
3	5/17	M-16	500	Base	54	48	57	57		60	55	52	60	62	58	61	59	56	56	55	42	52	52	48	51	50	50	50	51	47	49	46	41	42	32				70.1
25	5/5	M-16	1200	Base	44	44	47	43	47	51	51	48	51	48	44	46	43	43	40	43	53	62	61	51	50	49	46	39	38	41	41	36	19	20	13	8	11	8	66.3
25	5/5	M-16	1200	Base	40	37	46	45	48	49	50	50	57	53	51	51	52	48	49	59	65	70	70	66	59	54	54	49	45	40	38	36	24	26	21	13	18		74.7
25	5/5	M-16	1200	Base	50	49	54	50	55	55	55	52	52	51	49	46	44	40	42	51	57	61	62	56	50	47	48	44	38	45	36	36	19	21	17	13		8	67.8
25	5/5	M-16	1200	Base	41	35	48	42	45	42	48	50	50	49	47	46	47	44	47	56	61	67	68	62	57	54	51	49	43	37	36	37	23	25	21	8	17	8	72.1
25	5/5	M-16	1200	Base	37	43	41	41	45	45	47	50	51	52	53	47	41	43	47	52	56	62	62	59	57	52	49	47	42	36	34	35	20	23	19		16		68.1
25	5/5	M-16	1200	Base	37	33	40	44	43	48	50	52	51	51	51	49	42	41	44	53	59	64	62	58	55	52	49	45	40	36	34	35	18	25	21	8	13		68.7
25	5/5	.50 cal	0	Base	42	48	49	56	61	65	68	71	70	64	58	55	44	47	43	41	38	39	37	35	35	34	25	28	29		31	28		17	13		8		76.0
25	5/5	M-16	1200	Base	34	43	45	47	49	47	50	51	55	54	51	53	48	46	49	56	61	61	58	54	54	52	49	45	41	36	32	30	15	24	13	11	16		67.6
25	5/5	M-16	1200	Base	44	41	40	45	41	48	47	51	53	52	45	45	46	44	48	56	62	65	65	63	62	59	54	51	47	40	37	35	26	26	25	13	20		71.4
25	5/5	.50 cal	0	Base	48	48	48	63	62	61	69	67	69	64	60	54	45	44	40	39	37	40	37	34	34	34	28	30	30	33	39	32		19	14		15		74.9
103	5/12	M-16	20-434	Base	37				45	51	52	58	61	61	57	56	54	56	53	50	53	55	55	50	54	52	51	50	47	42	42	37	23	32	23		28		68.3
103	5/12	M-16	20-434	Base	44	41	48	43	53	50	54	54	57	56	57	55	53	55	54	50	51	55	55	50	55	53	52	48	47	41	42	39	20	32	23		26		67.2
103	5/12	M-16	20-434	Base	44	41	46	45	40	49	52	57	60	61	60	58	56	57	54	49	51	53	52	49	54	54	52	51	49	44	43	36	37	33			23		68.6
103	5/12	M-16	20-434	Base			38	41	41	52	54	56	58	59	58	57	55	56	51	51	53	55	56	51	56	54	52	50	47	43	41	37	20	32	25		25		68.0
103	5/12	M-16	20-434	Base	50		53	53	42	47	55	55	60	61	60	59	58	59	54	50	52	55	55	50	54	53	52	48	49	42	42	37	20	25	20		27		69.4
103	5/12	M-16	20-434	Base	46		47	38	45	47	53	57	60	61	62	61	62	63	57	53	54	54	56	54	60	54	53	51	51	47	46	41	32	32	31		25		71.3
103	5/12	M-16	20-434	Base			53	50	49	55	59	64	65	67	68	66	64	64	63	59	57	56	55	58	62	61	63	62	61	57	53	50	44	39	31	20	28		76.2
103	5/12	M-16	20-434	Base	44		50		42	51	52	54	58	59	60	62	60	56	56	55	51	52	49	49	55	53	52	55	51	47	45	43	38	35		20	31		69.2
103	5/12	M-16	20-434	Base			44	51	52	54	58	61	65	67	66	67	64	61	60	56	55	55	54	57	60	60	60	60	58	58	55	50	42	38	31	23	23		75.2
103	5/12	M-16	20-434	Base				45		45	41	54	59	60	61	61	59	57	59	57	53	54	51	50	56	57	57	55	57	49	53	53	46	39	28		25		70.3
103	5/12	M-16	20-434	Base	52		54	47	45	53	51	53	58	58	58	60	59	54	52	51	44	50	51	52	53	52	51	53	51	48	46	42	29	35	26		23		68.3
103	5/12	M-16	20-434	Base	41		47	49	50	50	53	56	59	60	60	60	58	56	57	53	50	51	51	52	57	56	56	55	54	49	46	42	28	33	26		23		69.6
103	5/12	M-16	20-434	Base	48		48	49	48	56	60	62	66	67	68	68	65	64	64	60	55	57	59	62	66	66	67	64	61	58	54	51	45	41	35	20	29		77.3
103	5/12	M-16	20-434	Base	41		44	53	49	52	59	59	65	67	66	65	65	62	60	55	54	54	53	55	59	58	59	59	57	55	51	48	40	37	23		20		74.6
103	5/12	M-16	20-434	Base	44		38	46	43	53	52	53	58	59	61	61	59	58	55	49	45	50	52	55	57	56	56	55	53	54	50	49	47	40	32		29	20	69.7
103	5/12	M-16	20-434	Base			48	48	41	51	53	56	60	62	65	63	59	59	57	53	48	50	50	51	55	54	55	55	54	51	48	45	35	34	25		25		71.0
103	5/12	M-16	20-434	Base			41	47	52	55	57	59	63	62	64	64	62	62	61	56	52	54	53	55	59	58	58	57	54	50	48	44	36	35	26		20		72.8
103	5/12	M-16	20-434	Base	49		47	47	51	52	56	58	61	63	63	61	60	60	57	53	50	51	49	52	56	55	56	54	53	47	46	43	37	33	23	25	23		71.0
103	5/12	M-16	20-434	Base			45	47		50	44	50	58	58	61	60	56	55	55	50	45	48	48	49	53	52	52	52	51	47	44	42	38	33	20		23		67.7
103	5/12	M-16	20-434	Base	54			51	48	55	59	61	64	66	67	66	65	64	63	60	60	61	65	69	73	76	74	69	75	73	65	65	63	58	52	49	40	29	82.8
103	5/12	M-16	20-434	Base			45	48	43	52	55	59	61	63	63	63	61	60	60	57	55	59	62	66	70	71	70	68	71	66	64	57	56	52	50	44	34		78.8
103	5/12	M-16	20-434	Base	48		49	41		50	57	58	64	65	64	65	62	61	61	56	50	53	51	53	56	55	54	55	54	52	49	46	38	33	28		31		72.8
103	5/12	M-16	20-434	Base	46		49	41	45	53	54	59	63	64	64	64	62	58	59	53	49	50	49	48	53	53	53	53	53	52	47	44	39	29	31	27			71.7
103	5/12	M-16	20-434	Base			47		53	55	50	59	60	63	59	58	57	56	58	55	49	50	50	51	55	53	52	52	51	45	43	39	31	31	23		23		69.6
103	5/12	M-16	20-434	Base	46		48	52	52	52	59	61	64	66	67	65	63	62	61	59	61	62	70	73	75	77	75	74	75	69	64	63	59	59	55	53	49	32	83.9
103	5/12	M-16	20-434	Base	48		41	50	52	54	56	60	64	65	65	66	63	62	61	57	64	68	74	75	72	78	78	78	74	71	72	75	72	67	63	58	52	33	86.0

Col.	Date	Event	Event	Mic	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																	Calc.
		Type	Dist. (m)	Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Overall SEL
103	5/12	M-16	20-434	Base			49	49	42	50	58	60	62	59	63	60	60	59	56	53	51	53	54	56	60	61	62	61	58	55	52	48	40	39	33		26	23	72.3
103	5/12	M-16	20-434	Base	50		51	46	47	54	57	59	62	61	60	59	58	59	55	53	53	53	55	53	57	56	55	53	52	48	45	42		32	20		27		70.4
103	5/12	M-16	20-434	Base			44	45	42	57	58	60	63	65	63	64	63	61	59	55	54	53	54	55	58	59	59	58	56	53	50	46	37	34	27		28		73.2
103	5/12	M-16	20-434	Base			47			49	54	58	61	60	62	61	58	59	58	53	52	53	56	59	63	65	67	62	65	63	62	56	50	43	36	29	26		74.6
103	5/12	M-16	20-434	Base	44		45	46	53	53	57	58	60	62	61	60	58	56	57	52	49	52	52	53	56	56	55	53	52	46	44	39		29	23		27		70.2
103	5/12	M-16	20-434	Base	41		48	50	52	54	57	57	60	62	62	62	60	57	58	53	49	50	53	53	56	55	58	58	55	52	52	48	45	41	37	23	20		71.3
103	5/12	M-16	20-434	Base			51		49	53	54	58	61	62	63	63	61	60	59	53	51	53	53	57	60	61	61	59	56	55	51	48	44	40	32	23	26		72.4
103	5/12	M-16	20-434	Base	49	41	50	38	49	54	59	61	65	66	68	66	65	64	63	57	54	55	55	57	59	61	61	60	58	58	55	53	48	44	38	27			75.5
103	5/12	M-16	20-434	Base			43		49	53	56	60	63	64	61	60	56	55	57	55	55	52	52	51	57	55	54	54	54	49	47	43	34	32	28				70.9
103	5/12	M-16	20-434	Base	52	52	48	50	53	53	55	59	62	62	65	65	63	61	59	55	56	56	61	66	72	76	77	72	68	65	64	61	61	56	56	52	41		81.9
103	5/12	M-16	20-434	Base	50		43	49	46	52	57	58	61	61	61	62	58	59	58	51	50	53	50	52	55	55	55	54	55	54	50	47	38	36	25		27		70.6
103	5/12	M-16	20-434	Base	41	47	48	50		52	50	56	58	60	60	58	56	54	55	54	51	50	50	51	53	53	52	52	51	45	45	41	26	28	20		20		68.3
103	5/12	M-16	20-434	Base			41	50	53	57	60	60	65	66	67	65	65	66	63	59	57	56	55	57	60	59	60	58	57	55	52	47	40	37	29		27		75.3
103	5/12	M-16	20-434	Base	41		41	52	41	51	54	58	60	61	60	61	59	58	58	52	49	51	52	53	53	54	54	53	53	49	47	44	34	33	25		23		69.9
103	5/12	M-16	20-434	Base	52	49	48	41		50	51	54	58	58	57	57	57	59	54	48	47	51	52	49	52	51	48	47	48	43	42	37		31			25		67.5
103	5/12	M-16	20-434	Base	46		38			51	52	52	57	59	59	58	59	61	58	50	51	54	54	50	53	51	49	49	49	43	43	38	26	28	26		25		68.5
103	5/12	M-16	20-434	Base	51	55	44	52	47	55	55	59	61	63	61	59	54	54	51	49	51	54	53	50	54	52	50	49	48	43	43	38		31	23				69.7
103	5/12	M-16	20-434	Base	41		46	52	56	60	59	62	68	68	69	69	67	68	67	64	65	65	67	72	74	75	75	78	74	67	67	65	59	53	51	43	36	23	84.2
103	5/12	M-16	20-434	Base	44		48	52	50	57	62	62	66	69	67	68	66	67	66	61	60	58	56	62	64	62	62	64	62	60	55	52	47	46	36	26	28		77.5
103	5/12	M-16	20-434	Base		44	38	52	53	58	59	62	65	66	67	66	64	64	62	60	60	58	56	59	62	61	62	62	61	58	53	48	40	36	30	20	28		75.8
103	5/12	M-16	20-434	Base			43	48	52	55	57	62	63	65	65	65	64	62	61	59	52	53	52	52	56	55	57	57	56	54	51	48	41	37	27		29		73.8
103	5/12	M-16	20-434	Base			49	41	48	46	54	58	61	62	63	63	62	60	60	60	62	69	71	73	75	76	77	77	74	73	75	71	65	63	61	57	50	30	85.1
103	5/12	M-16	20-434	Base	46		48	46	54	55	62	62	69	69	71	68	67	66	66	61	59	56	56	62	66	71	69	64	64	60	61	53	48	44	37	25	29		79.4
103	5/12	M-16	20-434	Base	49		50	46	49	54	61	62	63	67	68	67	64	65	63	60	58	58	54	59	63	62	61	61	59	57	54	50	43	37	31		29		76.1
103	5/12	M-16	20-434	Base	47		46	54	53	55	58	63	64	67	67	67	65	65	63	59	59	56	55	58	61	61	61	61	61	58	54	51	46	41	32	20	23	20	75.9
103	5/12	M-16	20-434	Base	47		46	52	40	55	56	62	64	66	67	65	63	64	62	60	59	58	56	57	59	59	62	61	58	55	52	50	42	37	28	20	23		75.0
103	5/12	M-16	20-434	Base	41			48	48	48	55	59	62	66	66	65	62	64	60	56	56	56	55	56	60	57	58	57	57	56	52	47	41	37	29		27		73.9
103	5/12	M-16	20-434	Base	51		49	44	53	56	61	62	68	66	69	67	65	63	61	58	56	55	54	57	59	58	59	59	58	56	52	49	42	38	29		30		76.0
103	5/12	M-16	20-434	Base	47		38		51	52	53	61	64	61	66	64	64	64	61	54	51	55	55	61	60	57	57	57	56	54	49	46	41	38	30		28		73.6
103	5/12	M-16	20-434	Base	46		46	48	44	52	53	53	55	57	58	59	56	53	55	52	49	51	50	51	55	53	55	53	52	46	45	40	30	31	23		26		67.6
103	5/12	M-16	20-434	Base			44	48	35	50	47	54	61	63	62	61	62	58	57	53	53	52	55	60	63	63	64	61	61	59	55	52	47	42	35	23	29		73.4
103	5/12	M-16	20-434	Base	51	43	50	44	35	55	56	58	61	61	63	62	60	60	60	56	56	56	60	63	66	68	67	66	63	58	56	53	48	43	37	29	25		75.8
103	5/12	M-16	20-434	Base	41		47	49	52	56	61	59	66	67	67	66	63	63	62	58	55	55	54	58	60	59	61	59	58	55	51	48	41	36	30		25		75.1
103	5/12	M-16	20-434	Base		46	48	51	51	53	54	57	62	65	66	67	60	62	61	57	55	55	56	61	62	62	61	59	57	54	51	47	38	36	27		26		74.4
103	5/12	M-16	20-434	Base	44		49	51	56	58	61	63	67	68	68	68	66	66	63	58	59	59	62	66	69	69	69	65	63	62	59	56	53	50	45	33	29		78.8
103	5/12	M-16	20-434	Base			45	49	44	56	58	61	64	65	65	64	62	62	60	56	55	54	55	56	60	59	60	58	58	55	51	50	45	38	28		30		73.9
103	5/12	M-16	20-434	Base	44		51	48	46	53	56	59	64	64	63	62	60	59	59	53	51	50	49	52	55	56	57	57	56	52	48	44	35	31	25		27		72.0
103	5/12	M-16	20-434	Base			50	49	49	55	59	62	62	64	65	65	63	64	60	58	56	56	56	60	62	62	61	58	59	55	52	49	45	40	30	20	27		74.5
103	5/12	M-16	20-434	Base			43	38	45	52	54	57	60	62	63	62	60	62	58	54	55	56	56	56	57	56	56	57	55	50	47	43	34	34	27	20	29		71.5
103	5/12	M-16	20-434	Base			46	49	51	58	58	62	64	66	66	66	64	65	64	59	62	58	56	62	63	62	63	61	60	57	52	47	41	38	31	20	25		76.0
103	5/12	M-16	20-434	Base			52	49	46	51	54	58	60	61	61	60	56	55	54	50	52	53	55	59	62	70	66	61	58	58	51	51	49	44	37	31			74.4
103	5/12	M-16	20-434	Base	47	41	43	46	44	49	52	55	63	62	66	66	65	68	67	62	59	57	58	61	63	66	65	67	64	61	60	57	55	49	45	35	30		77.0
103	5/12	M-16	20-434	Base			49	43	52	54	60	62	65	64	63	64	61	61	60	57	56	56	56	59	62	62	62	60	58	54	53	47	41	36	30		26		74.1
103	5/12	M-16	20-434	Base	48		50	38	45	53	50	57	64	63	66	63	62	63	62	54	51	50	51	53	56	56	57	56	55	53	50	47	36	36	32		26		73.0

Col.	Date	Event	Event	Mic	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc.
		Type	Dist. (m)	Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Overall SEL
103	5/12	M-16	20-434	Base	44		48	45	40	55	54	55	60	58	56	57	56	51	51	51	47	51	52	55	58	61	62	62	62	59	54	51	44	41	33	23	30		71.2
103	5/12	M-16	20-434	Base			44	44	48	55	55	58	61	63	61	63	61	59	57	54	52	53	51	52	56	56	57	57	56	51	47	43	31	34	29		23		71.4
103	5/12	M-16	20-434	Base	41		38	46	50	56	58	62	62	64	64	63	62	61	60	55	55	53	52	56	58	57	57	58	56	53	50	46	38	37	26	20	27		73.1
103	5/12	M-16	20-434	Base	46		49	52	51	57	58	63	67	68	67	68	65	67	65	59	57	56	56	57	59	60	61	60	61	56	53	49	43	36	29	31	23		76.7
103	5/12	M-16	20-434	Base			46	49	50	53	55	57	64	66	67	64	65	65	65	58	57	55	53	54	59	58	58	58	57	55	51	47	39	37	26	33	25		74.7
103	5/12	M-16	20-434	Base			50	52	52	53	58	61	64	65	65	63	62	62	63	58	56	58	61	64	67	67	65	62	64	63	58	54	51	47	40	31	29	20	76.5
103	5/12	M-16	20-434	Base	47	41		49	47	55	57	60	64	65	65	64	62	62	62	58	55	55	53	54	56	56	56	55	55	51	49	44	37	33	30		20		73.3
103	5/12	M-16	20-434	Base	41		47	49	40	48	54	58	61	61	60	59	56	59	54	50	50	51	51	49	53	51	50	49	47	44	43	39		31	23		23		69.0
103	5/12	M-16	20-434	Base			52			52	49	54	58	60	59	57	56	58	54	48	47	49	48	45	49	47	45	45	46	41	40	35		29			23		67.3
103	5/12	M-16	20-434	Base	46		47	45	40	49	52	55	58	57	58	56	57	55	53	51	48	52	51	48	53	52	52	48	47	41	42	37		30			20		67.0
103	5/12	M-16	20-434	Base		47	41	47	50	50	55	59	62	63	62	59	57	59	55	51	49	53	54	49	53	51	48	48	47	40	42	37		32			25		70.2
103	5/12	M-16	20-434	Base	44	53	52	57	54	56	59	63	65	71	70	69	68	67	64	59	56	55	56	63	67	64	62	61	60	58	54	50	42	39	31	20	28		78.4
103	5/12	M-16	20-434	Base	51		50	53	53	54	59	62	64	66	68	67	65	64	65	63	59	58	59	63	65	66	68	67	67	64	61	58	55	51	47	41	32		78.0
103	5/12	M-16	20-434	Base			38		50	53	55	58	62	64	65	65	63	62	58	55	54	53	55	61	63	64	63	64	63	59	55	52	49	44	38	33	29		74.8
103	5/12	M-16	20-434	Base			45	48	35	50	57	59	62	63	64	63	61	62	61	54	50	52	51	54	56	57	57	59	57	55	52	47	40	36	28		23		72.6
103	5/12	M-16	20-434	Base	52		48	47		51	54	57	60	61	59	60	60	60	57	51	45	50	52	55	53	56	57	58	57	53	49	42	34	35	27		26		70.3
103	5/12	M-16	20-434	Base	41		49	53	53	53	54	56	61	62	61	62	60	62	61	55	52	51	54	58	60	60	58	57	56	50	49	45	36	35	28		25		72.1
103	5/12	M-16	20-434	Base	50	51	54	48	48	50	54	57	61	61	60	58	56	54	53	50	51	54	55	52	60	58	56	55	54	51	47	44	39	36	26		25		70.1
103	5/12	M-16	20-434	Base				46	35	50	56	58	61	63	63	63	61	59	59	52	53	51	53	56	57	58	57	58	59	55	51	45	35	34	20		23		72.1
103	5/12	M-16	20-434	Base	52		46	38	54	56	58	62	66	66	67	66	64	63	61	57	56	57	61	64	67	68	67	64	62	61	56	54	49	47	42	32	26	20	77.2
103	5/12	M-16	20-434	Base			38	38	52	56	56	58	62	64	63	62	61	62	60	54	51	50	51	54	56	57	56	56	55	51	48	43	37	34	25		20		72.0
103	5/12	M-16	20-434	Base			45	38	51	51	54	57	60	62	63	62	59	57	56	53	47	49	49	50	53	53	53	54	54	52	47	44	35	32	29		25		70.3
103	5/12	M-16	20-434	Base	41		44	47	51	47	54	59	62	65	63	61	61	59	59	54	52	51	51	55	57	58	58	58	57	54	49	44	33	34	27		20		72.3
103	5/12	M-16	20-434	Base	48		47	46	41	57	56	58	62	63	64	63	62	64	64	56	53	52	51	54	58	58	59	57	57	54	50	46	35	34	30	20	28		73.2
103	5/12	M-16	20-434	Base			47	46	54	55	54	63	65	68	67	68	65	64	62	58	55	57	59	62	63	62	61	58	62	60	58	58	55	45	37	30	29		76.4
103	5/13	M-16	20-434	Base	41		48		52	55	55	58	62	64	64	64	60	58	57	52	46	49	47	48	51	52	52	52	52	43	44	39		32	25		30		71.4
103	5/13	M-16	20-434	Base	50		50	52	54	57	60	63	66	66	68	68	67	65	63	59	54	54	56	59	62	64	64	61	60	58	56	52	47	43	38	25	29		76.7
103	5/13	M-16	20-434	Base			38	52	42	55	55	58	60	62	63	62	59	56	55	53	49	48	49	53	55	56	55	54	52	45	44	39		32	28		20		70.6
103	5/13	M-16	20-434	Base	44		45	46	56	60	58	62	68	67	69	69	66	63	62	58	53	52	53	57	60	60	62	62	68	66	61	56	52	48	40	34	33	25	77.5
103	5/13	M-16	20-434	Base	41			43	47	55	57	61	63	64	65	65	61	60	58	52	46	48	47	49	52	53	55	55	54	50	48	43	25	31	26		29	20	72.5
103	5/13	M-16	20-434	Base	53	44		50	46	56	60	62	66	68	68	67	65	64	62	58	55	56	60	64	67	69	69	66	63	60	56	54	51	51	48	41	32		78.3
103	5/13	M-16	20-434	Base	46		41	45	51	55	60	62	66	68	67	67	64	64	62	57	51	51	49	52	54	56	58	58	58	55	51	47	39	37	28		23		75.2
103	5/13	M-16	20-434	Base	52	43		50	50	53	59	63	66	67	66	67	65	62	60	58	53	52	49	52	56	56	58	58	56	53	50	46	37	36	30		23		75.0
103	5/13	M-16	20-434	Base	52	41	51	46	51	52	58	58	63	63	65	63	62	61	60	55	43	48	45	48	49	51	53	53	52	48	46	41		32	26		27		72.1
103	5/13	M-16	20-434	Base	49		47	51	45	52	58	60	62	64	64	64	61	59	56	52	48	49	49	49	53	53	55	55	54	48	47	43		32	23		23		71.8
103	5/13	M-16	20-434	Base		46	45	43	40	52	55	59	63	64	64	63	61	59	59	55	50	48	47	50	53	54	55	56	55	52	49	43	25	35	27		25		71.9
103	5/13	M-16	20-434	Base			47	49	38	56	58	60	64	65	64	63	61	60	60	54	49	49	51	54	57	59	60	58	54	49	48	42	27	36	25		28		72.9
103	5/13	M-16	20-434	Base	41	41	50	41	49	54	57	61	64	65	66	66	63	60	61	56	49	49	48	50	51	53	54	53	53	47	46	43	23	33	25		27		73.4
103	5/13	M-16	20-434	Base			48	38	53	52	55	60	63	65	66	65	62	60	59	53	49	52	56	60	64	66	65	65	61	60	61	54	55	49	41	26	29		75.6
103	5/13	M-16	20-434	Base	44	45	47	48	38	51	53	56	60	62	61	60	58	58	56	50	46	42	45	47	50	50	53	57	65	69	64	52	48	49	38	34	26	23	73.7
103	5/13	M-16	20-434	Base	46		51	50	47	53	54	58	63	65	64	65	64	60	59	56	50	53	54	58	61	64	64	64	62	56	51	49	42	38	30		29		74.5
103	5/13	M-16	20-434	Base	46		43	43	50	57	60	63	64	66	68	66	64	62	61	56	51	52	51	52	56	57	58	57	58	61	68	60	52	44	38	31	30		75.7
103	5/13	M-16	20-434	Base	44		44	46	45	56	54	58	61	63	62	62	59	56	54	50	43	48	47	47	52	53	55	55	55	51	47	41	20	33	30		23		70.4

Col.	Date	Event Type	Event Dist. (m)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
103	5/13	M-16	20-434	Base	49	41	43		53	54	58	55	60	66	64	65	60	59	57	56	49	52	53	55	58	59	60	59	56	52	48	43	20	32	23		27		73.0
103	5/13	M-16	20-434	Base	41		44	51	52	54	56	58	62	64	65	64	61	61	60	54	51	54	57	61	65	66	65	63	63	63	58	54	50	45	38	30	29		75.4
103	5/13	M-16	20-434	Base	41		49	52	55	57	62	62	67	70	70	68	66	64	62	59	55	55	57	61	64	65	65	63	62	59	56	54	49	44	37	23	26		77.8
103	5/13	M-16	20-434	Base	44		48	52	52	52	53	56	59	61	63	63	61	58	57	55	50	49	48	49	53	54	55	56	55	51	48	45	38	34	27		23		70.9
103	5/13	M-16	20-434	Base	46	41	54	45	44	52	57	57	60	62	64	66	63	57	59	55	51	48	47	49	52	53	54	55	54	49	47	42	29	34	20		28		72.0
103	5/13	M-16	20-434	Base			48	49	49	53	58	59	62	64	65	65	60	59	59	51	49	50	46	47	51	51	53	53	52	46	46	41	27	33	27		27	20	72.0
103	5/13	M-16	20-434	Base	47		38	48	52	52	58	60	62	64	63	63	60	57	57	54	50	50	49	50	52	53	53	53	52	45	44	40		29	20		26		71.5
103	5/13	M-16	20-434	Base	46		43	50	48	54	56	58	62	63	63	64	61	59	56	51	45	48	46	50	53	54	56	55	54	53	52	46	42	38	31		25		71.5
103	5/13	M-16	20-434	Base			49	48	47	52	57	61	63	61	65	61	62	56	56	54	51	52	53	57	60	60	60	56	56	54	49	46	39	39	31	28	26		72.3
103	5/13	M-16	20-434	Base			43	47	46	56	59	63	65	66	66	65	61	60	58	53	48	50	51	54	57	59	58	56	56	53	49	45	36	36	23		26	26	73.8
103	5/13	M-16	20-434	Base			51	46	55	56	60	63	67	67	68	68	66	63	62	59	51	51	48	52	54	55	56	57	57	54	49	46	38	39	28		25		75.6
103	5/13	M-16	20-434	Base			44	49	51	50	56	59	62	62	63	63	60	58	54	51	45	49	47	49	52	53	54	54	55	56	52	49	43	40	36				70.9
103	5/13	M-16	20-434	Base	44		45		40	54	57	62	62	65	65	63	58	59	58	53	49	48	49	50	53	54	54	54	52	48	46	41	25	32			25		72.3
103	5/13	M-16	20-434	Base			47	46	49	55	56	61	64	65	66	65	63	61	60	55	51	49	50	53	56	59	60	56	56	54	49	49	42	38	33		27		73.7
103	5/13	M-16	20-434	Base	46		44	46	41	47	56	55	62	61	63	62	59	55	56	52	50	50	47	49	53	55	56	56	54	50	46	43	30	34	28				70.5
103	5/13	M-16	20-434	Base	41		41	53	41	56	58	60	65	65	67	65	62	61	60	54	49	49	48	47	51	51	53	54	53	48	46	43	31	36	23		26		73.4
103	5/13	M-16	20-434	Base			48		41	55	55	60	62	63	64	64	61	61	59	52	46	47	48	51	52	53	53	52	52	47	47	41		33			30		71.7
103	5/13	M-16	20-434	Base			47	38		48	47	50	55	58	59	60	57	53	53	53	54	56	63	65	70	72	72	73	69	61	60	59	52	50	48	43	36		79.1
103	5/13	M-16	20-434	Base	50		52	43	35	52	58	60	60	64	63	64	61	60	61	58	61	66	73	75	78	75	73	73	68	65	66	65	63	60	57	54	49	29	83.4
103	5/13	M-16	20-434	Base	44		41		38	56	53	57	62	62	64	63	61	59	57	54	46	50	53	57	61	62	62	59	54	53	51	47	39	38	29		26		72.6
103	5/13	M-16	20-434	Base			41		46	56	57	61	64	66	66	65	63	62	62	58	57	64	68	72	76	76	79	79	74	70	67	64	61	59	56	53	46	26	85.0
103	5/13	M-16	20-434	Base	47		38	49	51	51	56	60	64	65	65	66	62	60	59	53	48	51	53	57	58	59	58	56	55	52	49	46	39	38	30		26		73.4
103	5/13	M-16	20-434	Base			45	49	52	57	60	65	68	66	68	68	65	63	61	57	53	52	53	57	60	60	60	57	56	54	51	48	41	38	30		28		76.0
103	5/13	M-16	20-434	Base	48		46	51	52	58	62	63	65	68	67	68	67	64	61	57	54	51	51	55	58	59	60	59	59	55	53	51	42	40	33		29		76.1
103	5/13	M-16	20-434	Base	46		49	49	51	58	59	64	66	67	68	66	64	63	61	58	54	54	56	59	61	63	62	60	59	57	54	50	43	40	32		26		76.0
103	5/13	M-16	20-434	Base			51	54	50	51	55	59	64	67	66	65	64	62	60	56	52	52	55	57	61	61	61	60	59	58	55	53	48	42	34	23	28		74.6
103	5/13	M-16	20-434	Base			49	47	52	53	58	62	64	66	64	64	62	62	60	53	52	53	56	61	64	67	68	68	66	63	59	56	50	45	39	25	32	20	76.9
103	5/13	M-16	20-434	Base	46		38	45	35	51	53	57	62	62	63	63	61	59	58	54	53	54	57	60	62	63	61	60	59	57	57	51	52	45	40	33	25		73.2
103	5/13	M-16	20-434	Base			47	49	50	54	56	57	61	62	62	63	60	60	58	53	52	53	56	58	62	63	65	64	64	60	54	53	49	47	42	35	31		74.0
103	5/13	M-16	20-434	Base	48		41	43	38	49	48	40	48	50	59	58	56	55	55	52	51	52	58	64	68	71	75	75	72	61	67	61	60	51	50	48	43	23	80.5
103	5/13	M-16	20-434	Base	44	41	51	47	54	53	58	59	63	65	66	65	62	61	60	56	47	50	48	52	55	57	57	55	53	52	49	45	38	35	26		26		73.1
103	5/13	M-16	20-434	Base	51	43	47	47		49	56	61	66	66	66	64	64	60	61	56	59	61	64	68	72	72	71	68	63	66	59	64	58	51	48	43	35		79.8
103	5/13	M-16	20-434	Base			53	38	44	50	55	57	60	61	63	62	60	58	58	53	48	48	47	49	52	51	46	47	47	37	42	36		31	26				70.0
103	5/13	M-16	20-434	Base			50		43	52	56	58	61	62	63	63	60	60	59	53	49	51	50	53	55	55	53	52	52	47	46	41		34	29		26		71.2
103	5/13	M-16	20-434	Base	44		49	38	51	56	58	61	64	64	66	66	65	64	61	59	57	65	68	72	69	72	74	69	70	58	65	60	62	57	56	55	51	37	80.8
103	5/13	M-16	20-434	Base	47			43		46	46	54	57	59	59	59	57	54	55	54	55	57	63	67	71	71	70	69	65	61	61	62	58	56	56	52	42	20	78.2
103	5/13	M-16	20-434	Base				46		50	53	54	58	59	60	60	57	58	55	51	49	53	56	57	59	59	57	54	56	53	50	46	40	38	31	20	26		69.9
103	5/13	M-16	20-434	Base	44		41	41	42	49	52	55	59	61	64	63	60	61	60	53	50	50	46	49	53	53	54	55	54	51	51	47	40	35	28		28		70.9
103	5/13	M-16	20-434	Base	46		50	47	48	52	57	60	64	65	66	65	63	62	61	56	50	50	45	45	49	48	50	49	49	43	45	39		32	25		29		73.3
103	5/13	M-16	20-434	Base			49	51	49	54	59	62	66	67	68	67	65	63	62	57	52	49	49	50	54	53	54	55	55	52	49	44	33	36	23		29		75.1
103	5/13	M-16	20-434	Base	48			38	48	53	55	58	61	63	64	64	62	60	60	54	49	49	47	48	51	54	55	56	55	49	48	45	39	36	31		25		72.0
103	5/13	M-16	20-434	Base	41		41		46	52	57	61	64	66	66	65	64	63	61	56	48	50	48	48	53	53	55	56	56	52	49	45	35	37	30		23		73.6
103	5/13	M-16	20-434	Base	50		44	45	38	45	50	42	48	50	47	53	51	52	52	50	48	52	54	57	61	62	62	60	54	48	47	40		32	20		26		69.2
103	5/13	M-16	20-434	Base	46		38	51	49	54	56	61	63	65	66	65	62	62	60	55	50	50	47	48	52	52	53	54	53	48	47	42	26	34	20		26		73.2

Col.	Date	Event	Event	Mic	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc.
		Type	Dist. (m)	Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Overall SEL
103	5/13	M-16	20-434	Base			47	47	52	58	60	62	67	69	69	69	67	65	64	58	52	54	53	56	59	60	65	67	65	62	58	59	63	59	54	57	50	39	78.1
103	5/13	M-16	20-434	Base			44	52	52	52	57	57	61	65	66	64	61	62	59	56	50	51	48	49	53	55	56	56	55	50	47	43	30	34	25		20		72.7
103	5/13	M-16	20-434	Base	44		52	51	48	53	56	59	62	63	63	62	59	59	58	54	48	48	49	50	53	55	55	54	53	48	46	43	20	33	23		20		71.2
103	5/13	M-16	20-434	Base	41		43	47	51	53	54	55	58	62	62	62	60	59	59	52	48	46	46	47	51	52	52	52	50	45	44	40	32	29					70.0
103	5/13	M-16	20-434	Base				48	57	58	58	62	68	68	69	68	66	64	63	59	53	52	50	52	54	55	56	56	55	52	48	43	33	32	20		28		76.0
103	5/13	M-16	20-434	Base			41	45	50	52	58	60	63	65	66	65	63	62	62	56	51	50	51	54	57	58	57	56	56	55	53	50	44	41	36		25		73.9
103	5/13	M-16	20-434	Base	41		52	53	50	58	59	62	66	65	66	65	63	63	62	58	53	51	49	51	53	53	53	54	53	50	47	43		33			27		74.2
103	5/13	M-16	20-434	Base	47		50	50	46	56	59	62	66	68	68	67	65	63	63	59	57	57	62	67	70	72	73	74	70	65	63	64	59	58	50	47	37	20	81.0
103	5/13	M-16	20-434	Base	46		45	43	46	55	57	62	63	65	65	65	61	60	59	55	50	50	52	55	57	57	57	56	55	51	48	43	31	33	20		30		73.1
103	5/13	M-16	20-434	Base			43	45	49	54	58	60	64	65	66	66	63	62	62	55	53	51	50	54	56	56	57	57	55	53	50	46	39	38	30		27		73.9
103	5/13	M-16	20-434	Base			45	48	51	51	53	53	58	60	60	61	58	57	61	59	57	62	67	72	75	75	73	73	65	65	67	61	66	59	58	56	49	32	81.8
103	5/13	M-16	20-434	Base	50		47	49	41	52	58	59	60	62	63	63	60	54	53	53	47	49	49	52	56	55	54	51	49	42	42	38		32	20		23		70.6
103	5/13	M-16	20-434	Base	41	41	48	45	49	53	57	62	64	64	67	64	64	62	61	58	52	51	48	48	51	50	52	53	52	49	47	43	29	35	27		28		73.4
103	5/13	M-16	20-434	Base	47		48		54	56	59	62	65	66	66	66	64	62	61	57	53	52	50	50	53	54	54	55	54	51	49	48	38	35	26		26		74.1
103	5/13	M-16	20-434	Base	52		45	43	51	52	55	60	62	63	64	64	61	61	60	55	50	51	47	50	51	51	52	52	50	42	44	40	27	32	25		20		71.9
103	5/13	M-16	20-434	Base			50	46	46	55	58	60	64	65	66	64	63	62	62	57	52	51	50	52	54	55	56	55	53	49	46	41	28	31	20		25		73.6
103	5/13	M-16	20-434	Base			48	50	50	57	58	61	65	66	67	66	64	62	61	57	53	51	50	51	54	55	56	56	55	52	48	45	32	34	26		27	20	74.4
103	5/13	M-16	20-434	Base			46	52	54	54	55	61	65	65	65	65	64	62	62	58	59	63	67	71	75	75	76	78	75	77	67	65	66	65	61	57	51	38	84.9
103	5/13	M-16	20-434	Base			44	48		44	48	56	62	64	60	61	60	58	56	51	45	49	47	46	52	52	54	54	54	51	48	43		32	27		20		70.2
103	5/13	M-16	20-434	Base	41		38	38	55	55	58	58	62	64	63	63	61	58	56	51	47	50	49	51	52	54	55	56	56	52	49	45	35	37	29		25		71.6
103	5/13	M-16	20-434	Base	41		47	51	53	57	59	63	68	68	68	68	66	64	62	57	58	59	64	68	69	71	72	71	70	63	68	61	58	53	50	45	36		80.6
103	5/13	M-16	20-434	Base			49	50	54	55	59	60	62	62	67	67	65	61	63	56	50	50	50	49	53	54	54	54	54	51	48	44	37	36	30				73.8
103	5/13	M-16	20-434	Base			45	45	49	53	58	59	62	64	65	65	63	60	59	55	49	49	49	50	52	51	53	53	52	48	47	42	26	33	20		23	20	72.5
103	5/13	M-16	20-434	Base	41		46	45	38	54	57	59	64	65	65	64	61	61	61	57	60	62	67	73	73	74	76	77	76	74	70	66	64	63	59	54	49	36	84.4
103	5/13	M-16	20-434	Base	46		48	47	41	51	50	53	63	66	65	58	62	57	59	54	48	52	56	59	60	60	57	56	58	55	51	48	42	39	30	25	20		73.0
103	5/13	M-16	20-434	Base	44		44	45	46	55	56	63	64	66	67	66	64	63	62	55	50	53	53	56	58	60	61	60	57	53	52	47	43	38	31		29		74.8
103	5/13	M-16	20-434	Base			53	43	51	53	58	62	66	67	66	67	65	62	60	56	53	53	50	53	55	55	56	55	54	51	49	45	33	35	27		29		74.7
103	5/13	M-16	20-434	Base				43	51	50	56	59	61	62	65	64	63	61	62	62	59	63	69	69	72	75	77	78	79	77	72	68	67	66	62	60	55	33	85.7
103	5/13	M-16	20-434	Base	41		50	38	51	54	55	58	63	63	64	63	61	59	58	53	51	52	55	59	60	62	60	58	58	56	53	49	42	39	31		25		72.9
103	5/13	M-16	20-434	Base			43	49	38	55	58	61	64	65	66	66	63	59	60	57	52	52	53	55	56	57	57	56	56	53	51	48	39	37	27				73.7
103	5/13	M-16	20-434	Base			48	49	50	56	57	63	66	66	67	67	65	60	60	58	56	61	65	67	71	73	73	72	74	72	69	66	62	61	58	56	43	38	82.1
103	5/13	M-16	20-434	Base	48		43	46	41	51	54	58	60	61	62	61	58	55	55	49	49	51	56	61	63	63	64	63	61	56	55	55	49	47	45	36	27		73.0
103	5/13	M-16	20-434	Base				47	42	50	53	54	59	59	60	60	57	55	53	52	48	50	57	57	62	63	62	58	58	58	53	49	43	39	34	27	28		71.4
103	5/13	M-16	20-434	Base				48	46	46	53	55	58	59	60	59	56	54	54	52	53	60	65	67	70	71	70	72	76	73	70	63	62	59	58	55	51	33	81.4
103	5/13	M-16	20-434	Base			47	38	43	46	51	53	58	59	58	56	54	55	55	48	47	54	58	63	66	70	72	72	73	76	75	72	69	66	63	58	48	23	82.5
103	5/13	M-16	20-434	Base			41	49		51	51	56	60	61	62	62	60	57	57	57	54	51	52	57	64	70	71	77	76	76	70	66	67	63	62	58	55	40	83.0
103	5/13	M-16	20-434	Base			46	48		52	53	55	58	57	58	59	56	54	55	54	50	53	59	63	69	74	73	76	77	72	69	65	66	61	59	58	52	38	82.6
103	5/13	M-16	20-434	Base			38	43	52	56	59	60	62	65	65	66	63	61	60	57	52	53	57	59	64	64	63	61	60	58	57	52	49	45	41	30	30	20	75.0
103	5/13	M-16	20-434	Base	44		49	38	52	54	56	63	66	65	66	66	63	61	60	55	51	51	50	54	55	56	58	58	58	55	51	46	35	38	23		28		74.1
103	5/13	M-16	20-434	Base			47	44	52	56	57	61	64	66	65	65	63	60	59	54	50	50	49	52	55	56	59	58	57	55	51	47	39	37	30	20	26		73.7
103	5/13	M-16	20-434	Base		41	47	45	42	55	54	61	64	66	66	67	65	63	61	58	54	53	56	58	61	62	62	61	60	56	54	51	45	41	33	20	25		75.2
103	5/13	M-16	20-434	Base		41	38	52	54	56	61	63	66	67	68	67	66	62	61	58	53	55	58	61	64	65	65	63	61	59	54	54	48	44	37	23	25		76.7
103	5/13	M-16	20-434	Base			49	48	49	52	58	60	64	65	66	66	62	60	59	56	52	50	50	50	53	52	54	55	55	52	48	45	38	33	29		26		73.3

Col.	Date	Event Type	Event Dist. (m)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
103	5/13	M-16	20-434	Base			53	48	54	59	61	63	67	66	69	67	65	65	63	57	53	51	51	54	55	56	57	58	57	54	50	45	31	35	25		25		75.8
103	5/13	M-16	20-434	Base	44		49	48	48	57	58	61	64	65	66	65	63	61	58	54	51	52	50	52	56	55	58	58	56	53	49	45	35	37	26		20		73.4
103	5/13	M-16	20-434	Base			44	43	50	57	57	62	63	66	65	65	63	61	61	57	51	52	53	57	60	60	60	59	57	51	47	43		34	26		25		74.1
103	5/13	M-16	20-434	Base	50		52	45	49	56	59	59	63	64	65	64	61	60	59	53	46	49	50	51	53	55	55	55	54	51	48	44	26	34	25		27		72.4
103	5/13	M-16	20-434	Base			50	49	50	57	58	62	66	69	69	67	66	64	66	59	55	54	50	53	55	56	57	56	56	53	49	44	32	35	23		27		76.2
103	5/13	M-16	20-434	Base			45	50	49	53	57	59	63	64	65	64	62	60	59	55	49	48	49	50	52	54	54	54	53	49	46	42	29	34	29		23		72.3
103	5/13	M-16	20-434	Base	47	38	48	50	55	57	56	64	67	67	69	68	66	64	63	59	54	54	56	60	64	63	64	64	62	60	56	55	51	46	39	26	27	23	77.2
103	5/13	M-16	20-434	Base			51	38	47	53	59	60	63	64	65	64	63	63	63	57	50	50	50	51	53	55	55	55	55	52	48	45	39	35	23			29	73.3
103	5/13	M-16	20-434	Base	41		44	49	56	55	58	56	63	63	65	64	62	60	59	56	48	49	48	51	54	54	54	54	53	47	46	41	26	34			28		72.3
103	5/13	M-16	20-434	Base			50	50	49	57	60	64	67	68	70	69	67	66	65	60	55	52	52	54	56	56	58	58	58	55	52	48	37	39	32		25		77.0
103	5/13	M-16	20-434	Base			41	44		50	51	55	58	59	60	60	59	57	56	55	52	54	58	64	68	71	75	75	75	69	64	64	62	61	60	59	54	42	81.3
103	5/13	M-16	20-434	Base			47	49	54	59	61	65	67	68	68	67	66	64	63	59	55	54	55	58	61	62	63	62	59	55	54	48	44	39	33	23	23		76.8
103	5/13	M-16	20-434	Base	41		45	45	41	53	62	65	66	67	69	67	66	65	64	59	54	52	50	52	54	56	58	58	57	54	50	47	35	37	26		20		76.1
103	5/13	M-16	20-434	Base	47			55	54	60	61	63	67	68	67	66	65	62	61	57	53	51	50	53	54	55	57	57	56	53	49	45	31	34	20		23		75.3
103	5/13	M-16	20-434	Base			51	46		51	55	57	61	62	63	62	59	57	57	52	47	50	50	53	59	61	64	65	67	67	64	57	56	52	47	41	33	20	74.9
103	5/13	M-16	20-434	Base			50	47	52	56	59	63	65	65	65	64	61	60	60	57	53	54	50	51	54	54	56	56	55	51	47	43	33	33	29			27	73.4
103	5/13	M-16	20-434	Base	41		43	49	52	56	59	58	64	65	66	66	63	62	61	55	51	51	47	49	52	54	55	55	54	50	48	45	29	34	29		27		73.6
103	5/13	M-16	20-434	Base			38	41	44	52	55	58	62	63	65	65	64	64	63	59	56	60	62	67	70	72	73	69	68	73	65	62	59	58	56	52	43	35	80.5
103	5/13	M-16	20-434	Base	49		45	44	51	58	60	63	67	69	69	69	68	65	65	61	55	55	58	60	62	63	62	60	60	58	55	52	48	44	37	20	25		77.5
103	5/13	M-16	20-434	Base			41	48	49	52	52	60	59	63	64	63	58	60	60	51	50	48	44	44	47	49	51	52	52	50	47	42	27	34	23		23		71.0
103	5/13	M-16	20-434	Base	44		41	47	35	49	54	56	61	62	64	64	61	59	61	57	51	51	46	49	53	50	51	50	50	45	44	39	25	29	26		26		71.3
103	5/13	M-16	20-434	Base			48	50	49	54	59	60	63	64	64	63	60	57	58	55	48	49	51	55	56	57	57	56	56	52	50	46	37	35	26		28		72.1
103	5/13	M-16	20-434	Base	41		47	46	44	49	52	53	59	60	63	65	64	61	60	58	53	54	55	60	63	63	62	60	59	58	54	51	46	44	37	31	26		73.6
103	5/13	M-16	20-434	Base			48	41		51	48	53	57	58	61	59	58	57	56	51	48	52	56	59	62	63	63	61	58	51	48	45	35	35	30		25		71.5
103	5/13	M-16	20-434	Base	52		52	50	46	54	57	61	63	63	65	65	62	61	60	57	52	51	49	53	55	56	56	55	56	55	51	47	41	38	31	23	25		73.1
103	5/13	M-16	20-434	Base	41		38	46	52	53	55	59	63	64	65	64	61	58	58	56	52	50	50	52	54	54	54	53	51	44	44	40	25	33	20		23	20	72.2
103	5/13	M-16	20-434	Base			49	49	53	53	62	64	64	66	68	66	64	63	63	60	54	54	57	59	62	62	60	57	57	54	53	49	44	39	31		27		75.7
103	5/13	M-16	20-434	Base			46	50	50	57	57	60	65	64	67	66	63	63	61	58	56	55	60	62	65	65	64	62	60	60	56	52	47	44	37	27	25		76.0
103	5/13	M-16	20-434	Base			51	50	56	56	57	61	65	65	65	65	63	60	61	58	54	54	56	60	63	62	62	60	58	57	54	52	49	46	39	32	29		74.7
103	5/13	M-16	20-434	Base	44		44	47	49	51	56	59	62	63	64	63	61	60	59	57	52	49	48	50	53	53	52	51	49	43	44	41	27	32	20		25		71.6
103	5/13	M-16	20-434	Base			48	45	49	54	54	59	61	61	61	61	61	61	62	56	59	58	72	75	75	72	76	79	76	76	67	69	65	64	63	61	54	39	85.0
103	5/13	M-16	20-434	Base				45	50	52	58	62	64	66	67	66	64	62	61	57	56	57	63	65	67	70	71	69	64	57	59	56	52	46	41	35	29		78.5
103	5/13	M-16	20-434	Base	44		53	45	48	54	53	57	61	63	64	63	60	57	54	55	51	51	51	53	57	58	56	55	54	54	51	47	40	38	29		27		71.3
103	5/13	M-16	20-434	Base		41	45	47	46	56	56	58	61	63	63	63	61	60	59	57	56	58	60	65	70	75	73	76	76	67	62	60	62	55	52	50	43	20	82.2
103	5/13	M-16	20-434	Base		41	50	51	48	54	58	61	63	65	67	68	65	60	59	55	52	52	52	57	58	59	60	58	55	51	49	45	32	35	25		20		74.5
103	5/13	M-16	20-434	Base	41	48	50	50	52	54	57	59	62	65	65	64	62	60	58	53	49	51	50	53	56	56	56	54	52	48	47	42	30	32					72.6
103	5/13	M-16	20-434	Base	46	44	44	50	52	56	57	60	63	64	64	64	61	60	58	54	53	54	58	62	65	66	67	66	63	60	54	52	47	43	37		28	26	75.7
103	5/13	M-16	20-434	Base			50	41	51	53	57	60	64	66	65	64	62	58	58	54	52	51	49	51	54	53	54	52	51	45	44	40	29	30			20		72.8
103	5/13	M-16	20-434	Base				43		51	46	45	50	49	53	55	56	55	59	59	56	59	61	67	70	75	79	78	70	64	65	64	62	59	56	56	48	32	83.3
103	5/13	M-16	20-434	Base	41		45		47	51	54	58	61	61	62	63	61	57	56	53	49	53	55	58	61	63	64	61	58	54	52	47	40	37	32		26		72.8
103	5/13	M-16	20-434	Base	50		52	47	51	53	53	57	59	62	61	60	56	55	54	52	51	53	56	60	63	65	66	64	62	57	54	53	45	41	34	20	31		73.7
103	5/13	M-16	20-434	Base				46	49	54	59	61	63	65	64	63	60	59	59	56	57	56	61	63	65	67	69	69	68	65	59	58	54	51	44	37	25		77.5
103	5/13	M-16	20-434	Base			50	49	48	49	54	57	60	62	62	60	58	56	55	54	52	54	56	60	62	63	60	58	59	56	54	49	44	40	34	25	25		72.1
103	5/13	M-16	20-434	Base	55		52	43	49	49	55	58	62	64	62	62	59	57	56	53	54	51	51	55	57	57	57	56	55	53	48	45	38	34	27		25	23	71.4

Col.	Date	Event	Event	Mic	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																	Calc.
		Type	Dist. (m)	Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Overall SEL
103	5/13	M-16	20-434	Base			49	45	50	54	58	59	62	63	62	63	60	58	56	54	51	54	50	52	53	52	52	52	52	48	45	42	29	28	20				71.2
103	5/13	M-16	20-434	Base			47	48	49	53	56	59	64	63	62	61	58	58	56	52	51	54	57	62	67	67	67	67	64	60	54	57	49	48	43	35	31		75.8
103	5/13	M-16	20-434	Base			41	48	51	53	57	60	62	63	64	66	64	62	61	59	56	54	52	54	55	56	56	56	56	53	49	45	30	32	29		26		73.2
103	5/13	M-16	20-434	Base			50	47	43	52	51	49	53	55	55	56	55	53	53	52	54	55	61	64	67	67	68	66	64	60	61	56	60	58	54	49	41	20	75.4
103	5/13	M-16	20-434	Base	50			46	52	56	58	60	64	63	65	64	61	59	57	55	54	52	51	57	59	60	61	60	58	55	50	48	43	38	32		23		73.3
103	5/13	M-16	20-434	Base	52		41	53	52	53	58	61	62	63	63	62	59	55	56	55	52	54	59	66	71	72	76	76	73	71	68	62	61	58	55	51	44	33	82.1
103	5/13	M-16	20-434	Base		50	46	51	52	52	59	60	63	64	65	66	63	61	61	58	56	59	63	66	68	70	71	71	68	64	60	62	56	53	46	43	33		78.9
103	5/13	M-16	20-434	Base	41		38		48	50	49	53	59	63	64	60	59	61	59	54	53	52	47	49	52	52	53	53	53	48	46	42		29	30		20		70.5
103	5/13	M-16	20-434	Base			48	51	52	53	52	57	60	62	64	62	59	55	56	55	52	52	49	52	55	54	54	53	51	47	45	40		30	20		23	20	70.5
103	5/13	M-16	20-434	Base	53		41	46	55	55	56	62	61	65	64	64	61	59	60	56	55	57	61	64	67	69	70	70	68	65	59	56	54	48	44	36	32		78.2
103	5/13	M-16	20-434	Base				41	47	53	55	56	58	61	62	61	58	57	54	52	50	51	52	54	58	58	57	56	65	59	58	51	48	41	35	20	25		71.7
103	5/13	M-16	20-434	Base			43	45	53	53	57	58	60	61	62	62	60	56	55	54	52	52	52	55	59	59	60	59	57	52	50	48	41	38	32		25		71.5
103	5/13	M-16	20-434	Base			44	52	54	58	56	64	64	67	66	66	64	62	61	57	52	53	52	55	56	58	58	57	55	53	50	47	38	36	26		27		74.5
103	5/13	M-16	20-434	Base	46		50	53	52	55	55	60	61	63	64	63	61	59	58	53	48	51	52	55	57	58	59	57	54	50	50	46	36	34	28		26		72.1
103	5/13	M-16	20-434	Base	41		41	47	35	49	53	57	61	62	62	60	58	57	55	52	48	50	51	55	56	56	56	56	54	48	48	44	39	30	27		27	20	70.2
103	5/13	M-16	20-434	Base	46	41	48	49	49	56	59	61	66	67	66	68	64	63	63	61	61	65	68	70	74	74	76	78	77	71	65	66	61	61	57	55	47	34	84.4
103	5/13	M-16	20-434	Base	44		46	46	53	54	57	61	64	65	66	66	62	61	61	58	59	60	68	69	69	72	74	76	76	73	68	62	64	61	57	55	47	29	82.8
103	5/13	M-16	20-434	Base			44	47		51	53	56	60	61	61	60	58	56	56	55	52	52	53	56	61	63	65	66	67	61	58	61	54	52	47	43	35		74.5
103	5/13	M-16	20-434	Base			48	55	51	53	59	59	66	67	68	67	63	63	62	58	53	54	55	59	61	61	60	60	58	55	52	49	41	39	32		20		75.5
103	5/13	M-16	20-434	Base	53		45	51	49	52	56	58	61	62	61	60	60	57	58	52	48	51	53	57	60	61	61	59	56	57	50	48	44	44	38	39	29		71.8
103	5/13	M-16	20-434	Base	46		47	45		52	51	56	60	61	63	63	61	58	60	53	49	51	49	53	56	58	60	59	56	52	50	49	42	40	31		23		71.5
103	5/13	M-16	20-434	Base	44		45	54	55	56	60	62	65	66	66	66	64	63	62	58	57	59	62	65	68	68	67	67	66	62	57	54	50	45	39	30	32		77.8
103	5/13	M-16	20-434	Base	41		51	49	38	53	55	57	61	63	64	63	62	61	59	57	54	54	54	58	60	61	59	56	57	54	50	46	39	37	30		28		72.8
103	5/13	M-16	20-434	Base			52	49	50	49	54	57	61	62	64	64	63	61	59	55	55	56	61	64	66	68	68	67	66	63	59	56	49	46	39	28	28	23	76.8
103	5/13	M-16	20-434	Base				38		47	49	52	54	53	53	56	54	51	51	47	48	48	46	41	47	45	45	44	41	38	39	39		32			25		63.5
103	5/13	M-16	20-434	Base			50	38	44	50	48	56	57	59	60	57	55	56	52	48	50	48	47	44	48	43	42	44	44	37	40	38		27			28		66.9
103	5/13	M-16	20-434	Base			43	48	51	55	57	61	64	66	67	66	64	62	61	55	54	54	50	50	54	52	53	53	53	51	48	44	20	37	32		25		74.0
103	5/13	M-16	20-434	Base		51	51	54	48	59	58	63	66	67	66	63	61	62	62	58	56	55	52	55	56	55	56	56	55	52	49	45	29	35	34		23		74.2
103	5/13	M-16	20-434	Base	50		41	43	49	52	56	58	62	63	63	63	60	58	57	54	51	52	49	50	53	52	55	54	53	51	48	45	41	35	25		20		71.2
103	5/13	M-16	20-434	Base	52		51	41		44	38		48	48	46	47	43	29	46	46	39	44	46	50	56	57	62	63	71	70	63	58	56	49	46	39	31	23	74.9
103	5/13	M-16	20-434	Base					44	54	55	58	62	61	61	61	59	57	57	55	51	52	49	48	52	52	53	53	53	51	47	41	20	29	23		26		70.1
103	5/13	M-16	20-434	Base	44		48	48	54	57	61	61	63	65	66	64	62	60	62	58	56	55	56	60	63	65	66	65	62	57	54	51	45	41	35	28	29		75.6
103	5/13	M-16	20-434	Base				41	47	55	59	62	63	66	64	64	61	60	58	56	55	54	50	52	54	54	56	56	56	54	50	45	33	36	25		29		73.0
103	5/13	M-16	20-434	Base	41		51	49	44	52	57	61	63	65	64	64	61	58	60	58	52	53	49	50	53	52	52	53	53	51	48	44	32	32	27		20		72.2
103	5/13	M-16	20-434	Base	46		51	50	42	49	57	57	62	62	62	60	59	56	54	53	49	50	48	51	53	53	54	54	53	50	46	43	34	32			23		70.0
103	5/13	M-16	20-434	Base	44		48	44	48	55	57	63	62	66	65	64	61	61	58	57	53	50	51	55	55	56	57	58	57	54	51	48	44	39	30		23		73.4
103	5/13	M-16	20-434	Base	50		52	52	52	56	61	61	64	63	64	62	61	60	60	55	55	53	53	56	58	59	59	58	56	51	48	43	20	34	23		25		73.1
103	5/13	M-16	20-434	Base	47		46	49	45	55	57	58	61	62	64	65	62	60	58	57	54	52	54	57	58	58	57	56	57	56	54	49	44	40	25		27		72.7
103	5/13	M-16	20-434	Base	44			52	50	55	59	61	63	64	64	62	61	60	60	55	56	54	56	59	61	62	62	58	59	56	53	50	45	42	36	20	29		73.8
103	5/13	M-16	20-434	Base		47	50	51	55	54	58	60	64	65	65	63	62	61	61	57	55	54	51	53	54	55	55	55	54	50	48	41	20	34	25		29		73.1
103	5/13	M-16	20-434	Base	44		47		45	54	58	61	63	66	66	65	63	62	62	58	54	52	51	54	55	54	53	54	53	50	47	43	33	34	23				73.6
103	5/13	M-16	20-434	Base	46		49	49	40	54	59	58	63	64	64	63	61	60	61	58	59	61	66	70	71	71	77	77	73	76	70	66	66	62	61	55	46	36	83.8
103	5/13	M-16	20-434	Base	49		47	47	42	51	51	57	61	62	62	63	60	57	59	56	54	55	57	60	64	65	66	66	65	62	58	57	54	50	46	33	29		75.0

Col.	Date	Event Type	Event Dist. (m)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
103	5/13	M-16	20-434	Base	49		49	41	44	51	54	54	59	61	64	62	59	58	55	52	52	55	58	65	69	69	69	71	67	63	59	60	55	56	49	39	30		77.7
103	5/13	M-16	20-434	Base	50		38	49	49	56	61	61	64	66	66	65	62	62	61	59	63	64	69	72	74	72	73	74	70	64	65	62	60	56	55	52	43	29	82.0
103	5/13	M-16	20-434	Base	44		49	49		54	56	60	63	64	63	61	61	59	58	56	53	53	50	52	55	55	56	55	54	50	48	43		32	26		25		71.9
103	5/13	M-16	20-434	Base	44		47	45	45	55	55	60	64	64	64	63	61	58	60	54	52	53	47	50	54	52	54	53	53	49	47	42	29	33	27		26		72.1
103	5/13	M-16	20-434	Base	44		49	45	52	55	55	62	63	66	66	65	61	61	59	60	59	64	66	71	73	75	76	75	69	68	66	64	64	63	61	55	47	44	82.9
103	5/13	M-16	20-434	Base	44		49	44	52	54	57	59	62	64	62	61	58	59	58	55	52	53	50	53	56	58	59	60	60	58	54	49	42	38	29		27		72.2
103	5/13	M-16	20-434	Base	46	47	48	43	50	52	58	60	62	64	63	62	61	57	58	55	53	54	53	55	58	59	58	57	56	53	51	46	38	37	25		31		72.3
103	5/13	M-16	20-434	Base	54		54	53	50	57	57	60	63	64	64	63	62	60	59	54	52	53	55	57	61	63	63	61	59	57	54	52	44	41	34	23	26		73.8
103	5/13	M-16	20-434	Base	49		48	41		55	57	59	62	63	63	62	60	59	59	58	55	54	52	52	55	54	54	53	51	45	46	41	29	30	20		29		71.6
103	5/13	M-16	20-434	Base	44	41	43	45	52	51	57	59	63	63	63	62	59	58	59	56	53	53	53	56	59	60	60	58	57	54	50	46	39	37	31		30		72.4
103	5/13	M-16	20-434	Base			51	43	46	52	55	54	58	61	63	62	55	56	55	53	56	55	62	60	61	61	62	59	60	58	54	52	50	45	39	27	29		72.5
103	5/13	M-16	20-434	Base			47	53	49	50	50	55	59	61	62	60	57	57	55	50	50	50	47	42	50	46	44	46	43	37	37	34		25	23		27		68.6
103	5/13	M-16	20-434	Base				47	47	55	56	58	62	63	63	61	58	57	59	56	53	55	54	58	59	60	59	57	57	55	52	49	42	39	30		29		72.2
103	5/13	M-16	20-434	Base			47	38	50	55	60	61	64	65	66	63	60	58	57	57	54	57	58	62	65	65	64	63	59	56	54	50	48	43	36	23	28	20	75.1
103	5/13	M-16	20-434	Base	41		47	50	52	53	58	60	63	63	65	63	62	63	62	58	53	54	56	58	60	62	62	61	59	55	51	47	38	38	32		25		74.0
103	5/13	M-16	20-434	Base				47	50	52	53	58	62	63	61	60	58	56	59	54	51	56	57	59	64	63	67	67	63	55	55	53	50	43	36	30	27		74.6
103	5/13	M-16	20-434	Base	41			45	38	52	53	58	61	62	63	61	60	60	60	54	51	51	52	54	56	56	55	54	54	49	48	46	36	34	28		23		71.1
103	5/13	M-16	20-434	Base	50		46	48	50	53	55	59	62	63	64	64	62	63	63	57	54	54	57	62	63	67	69	71	71	70	66	62	58	54	48	40	34	20	78.6
103	5/13	M-16	20-434	Base	52		49	48	38	50	50	57	60	62	62	63	59	57	56	53	51	50	49	51	52	51	51	51	52	45	45	41	36	34	26		27		70.1
103	5/13	M-16	20-434	Base	44		41	48	48	47	55	56	60	59	60	61	59	57	54	55	60	62	68	73	72	69	71	74	76	73	62	60	63	58	52	53	44	29	82.2
103	5/13	M-16	20-434	Base	46		48	47	51	53	55	59	63	62	60	63	60	60	60	59	54	54	56	59	63	64	66	65	64	59	52	51	46	42	34		28		74.6
103	5/13	M-16	20-434	Base	46			41	52	54	57	60	63	64	65	63	60	59	60	59	59	62	68	71	73	72	72	71	67	68	67	63	58	55	54	47	38	25	80.7
103	5/13	M-16	20-434	Base		41	50	47	51	53	58	60	62	64	64	64	62	60	60	60	64	66	70	72	76	77	75	73	72	70	69	67	63	58	54	49	44	29	83.7
103	5/13	M-16	20-434	Base	47		52	44	42	49	53	55	59	62	61	60	55	53	55	54	51	53	52	54	58	58	61	61	62	59	57	52	48	42	36	28	20		71.4
103	5/13	M-16	20-434	Base	46		48	38		51	54	58	61	63	64	62	59	57	56	54	53	52	48	50	53	51	52	52	51	48	46	41	23	29	29		25		70.6
103	5/13	M-16	20-434	Base			48	44	51	56	55	59	63	64	64	62	59	58	58	54	53	51	51	53	55	57	57	56	55	53	51	49	44	41	34		25		71.8
103	5/13	M-16	20-434	Base			51	49	48	52	54	59	61	62	63	61	59	57	56	54	52	53	53	58	63	61	61	60	60	58	54	51	47	42	35	23	23		72.6
103	5/13	M-16	20-434	Base	48			46	49	55	58	60	65	65	65	64	61	61	60	57	57	58	62	66	67	66	64	63	66	66	61	58	56	50	46	42	29	20	76.9
103	5/13	M-16	20-434	Base			52	49	46	51	53	56	60	60	61	59	57	56	56	54	51	52	51	53	57	57	57	54	51	45	43	39		32	20		28		69.7
103	5/13	M-16	20-434	Base	44	45	53	52	50	56	58	63	64	65	65	64	61	60	59	58	55	54	52	54	57	57	57	56	54	52	49	45	36	37	33		23		73.4
103	5/13	M-16	20-434	Base	46		46	52	44	49	52	56	60	61	61	61	59	59	58	53	50	51	49	52	55	57	58	55	53	50	48	43	33	32	23		23		70.3
103	5/13	M-16	20-434	Base	54		47	50		48	51	53	59	60	61	60	59	61	60	54	48	48	48	45	49	47	45	44	43	37	40	35		23	20		25		69.2
103	5/13	M-16	20-434	Base			51	46	42	51	52	56	60	61	61	61	59	59	57	50	49	49	45	44	49	45	45	45	44	34	40	35	20	20	28		27		69.1
103	5/13	M-16	20-434	Base	48	44	38	46	47	53	59	61	64	65	66	65	63	62	61	58	55	53	53	54	57	58	59	57	56	55	52	48	42	40	31		25	20	73.9
103	5/13	M-16	20-434	Base	52		47	51	49	52	53	59	63	63	64	63	61	59	56	51	49	50	48	50	53	54	54	54	54	52	48	43	31	31	20		23		71.7
103	5/13	M-16	20-434	Base			38	51	47	53	58	59	63	63	64	63	61	60	59	54	54	54	56	59	61	62	62	62	60	55	54	50	41	39	31	20			73.7
103	5/13	M-16	20-434	Base	41		43	44	53	56	59	64	67	65	68	67	64	61	60	56	53	53	51	54	56	57	58	58	56	53	49	44		35	23		30		75.0
103	5/13	M-16	20-434	Base	44		38		51	52	53	56	59	60	61	61	58	54	53	53	48	50	47	48	51	51	51	51	50	45	44	38		32	23		20		68.8
103	5/13	M-16	20-434	Base			48	52		44	42	35	49	44	50	53	53	51	51	49	48	49	54	56	59	63	64	63	62	58	53	52	52	50	42	32	32		70.8
103	5/13	M-16	20-434	Base	48		46	41	46	54	56	60	63	62	59	63	60	59	57	56	54	53	55	57	61	62	63	63	61	59	55	54	49	44	35	20	27		73.4
103	5/13	M-16	20-434	Base	47		43	50	49	53	58	60	63	64	65	64	61	60	60	55	51	53	54	57	60	60	59	57	56	54	51	48	41	38	31		23		73.3
103	5/13	M-16	20-434	Base	41		44	48	38	54	58	58	62	65	63	64	60	60	60	55	52	52	49	53	55	56	56	54	53	50	47	44	26	32			27		72.2
103	5/13	M-16	20-434	Base	46		52	38	49	52	56	58	61	63	62	63	61	59	59	59	58	58	62	63	67	69	69	71	70	63	60	55	58	51	45	38	29		78.0
103	5/13	M-16	20-434	Base	41			43	50	53	54	56	61	59	62	61	57	55	55	54	51	51	52	54	59	60	59	58	58	56	51	50	42	38	32		23	20	70.8

Col.	Date	Event Type	Event Dist. (m)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
103	5/13	M-16	20-434	Base	44			47	51	55	57	58	63	64	64	63	61	58	57	54	52	52	51	54	58	59	60	59	57	52	46	44	30	32	20		26		72.4
103	5/13	M-16	20-434	Base			49	53	46	53	56	59	62	63	64	63	61	59	57	55	53	54	54	56	60	62	64	63	60	56	54	51	45	42	34	25	26		73.6
103	5/13	M-16	20-434	Base	41		48	41	46	55	55	58	61	61	62	62	61	60	62	62	60	68	70	73	74	77	79	81	80	77	72	70	71	68	65	64	59	48	87.2
103	5/13	M-16	20-434	Base			38	43		50	49	53	57	59	58	58	55	54	53	49	48	52	54	58	59	61	62	60	56	50	52	49	40	36	32	23	23		70.2
103	5/13	M-16	20-434	Base	46	47	38	47	48	54	54	58	60	61	61	62	61	59	58	53	49	50	49	51	54	55	55	54	51	47	45	42		30	20		20		70.4
103	5/13	M-16	20-434	Base			47	47	41	54	56	58	62	63	65	63	60	60	61	57	59	63	65	69	70	72	72	73	73	69	60	65	57	50	50	42	34	23	80.9
103	5/13	M-16	20-434	Base			48	49	48	54	55	57	60	62	62	62	60	59	58	57	61	64	68	70	75	77	77	76	74	69	68	68	64	59	57	52	43	31	83.9
103	5/13	M-16	20-434	Base			38	45	41	49	53	53	59	62	62	62	60	56	55	52	53	56	58	63	67	68	73	71	68	63	64	55	55	51	47	43	34		78.2
103	5/13	M-16	20-434	Base	44		47			55	57	60	62	62	65	63	62	60	60	58	54	54	55	58	60	62	63	61	59	54	51	48	40	37	29		25		73.6
103	5/13	M-16	20-434	Base			43	38	41	51	54	56	58	60	60	61	59	58	59	56	53	54	54	58	60	62	61	60	58	57	54	53	48	44	39	31	29	20	71.9
103	5/13	M-16	20-434	Base			43	48	40	53	55	57	61	61	61	63	60	57	59	53	51	54	56	59	62	63	62	59	57	56	52	49	43	40	34		32		72.6
103	5/13	M-16	20-434	Base	47		47	49	48	55	57	55	62	64	65	63	58	58	56	53	49	51	51	53	56	58	58	59	59	59	51	46	42	36	28	20	27		72.4
103	5/13	M-16	20-434	Base	48		48		48	53	52	57	62	60	61	61	61	60	62	63	61	66	66	68	69	69	72	73	74	73	70	67	66	64	60	57	49	28	81.5
103	5/13	M-16	20-434	Base	51		46			45	54	54	58	60	58	58	55	55	54	53	49	50	52	56	59	62	61	59	52	56	53	48	50	51	49	34	30	20	70.3
103	5/13	M-16	20-434	Base	41		38		50	54	54	58	61	61	62	62	58	56	56	51	51	52	51	48	51	50	49	47	46	40	41	37		32	25		23		69.6
103	5/13	M-16	20-434	Base	41		49		51	56	60	62	62	63	64	63	62	61	61	60	61	63	66	71	73	75	76	76	74	72	70	61	64	58	56	51	42	25	83.7
103	5/13	M-16	20-434	Base			38	46	51	55	59	63	66	65	66	66	62	63	64	61	59	61	60	63	66	67	66	64	63	61	56	53	47	43	35	25	28	20	77.0
103	5/13	M-16	20-434	Base	44		46	54	49	53	54	60	64	65	65	65	64	62	62	61	55	56	53	56	57	55	56	56	54	49	47	42		31			23		73.8
103	5/13	M-16	20-434	Base	44			38	50	52	53	54	59	59	61	60	60	59	58	56	55	52	49	53	56	55	57	56	56	53	50	47	39	37	28		26		70.2
103	5/13	M-16	20-434	Base			50	47		49	54	54	57	59	60	60	58	55	55	53	51	53	49	50	52	52	50	51	51	47	45	39	20	27	23		23		68.3
103	5/13	M-16	20-434	Base	47	43	47	53	55	54	58	59	60	62	63	63	62	59	57	57	53	53	50	52	55	55	57	58	56	54	49	44	34	32	25		23		71.9
103	5/13	M-16	20-434	Base	47		50	51	47	52	53	58	59	60	61	60	57	57	62	58	54	52	49	52	52	51	51	52	50	44	44	38	27	28	20		28		70.0
103	5/13	M-16	20-434	Base	48	49	47	49	47	53	58	59	62	63	64	64	61	59	61	57	54	55	55	58	61	61	61	60	58	54	52	47	38	37	29				73.4
103	5/13	M-16	20-434	Base	44		51	38	51	54	57	54	61	62	61	60	59	56	54	53	50	51	49	51	53	51	53	53	52	45	44	40		30	25		20		69.6
103	5/13	M-16	20-434	Base	47		43	45	50	53	55	58	60	62	64	64	61	62	63	54	55	56	55	58	60	60	58	57	59	55	54	52	45	41	36		25		73.0
103	5/13	M-16	20-434	Base	41		44	51	52	55	60	62	63	64	65	64	63	62	59	58	56	54	52	54	56	56	55	55	54	49	48	44	37	34	28	20	28		73.2
103	5/13	M-16	20-434	Base	46		38	47	35	53	56	55	61	60	63	62	59	57	56	53	51	53	52	56	58	57	56	55	54	49	48	43	38	34	26		20		70.8
103	5/13	M-16	20-434	Base			38		48	49	55	58	60	62	63	62	60	60	59	56	53	53	53	56	60	61	62	62	61	57	52	47	40	37	26		27		72.7
103	5/13	M-16	20-434	Base	52		38	45	52	53	57	59	62	63	63	63	61	59	59	57	53	52	50	52	54	54	54	53	53	50	46	42		33	20		29		71.5
103	5/13	M-16	20-434	Base	46		47	44	54	53	54	57	61	61	61	61	59	57	58	55	54	58	58	62	67	68	69	70	69	65	62	60	60	54	47	40	31	26	77.3
103	5/13	M-16	20-434	Base	41			49	48	51	56	56	60	61	60	58	55	56	56	51	47	49	47	48	51	50	49	51	51	45	43	39		30	26		20		68.4
103	5/17	M-16	20-434	Base	54		48			58	63	62	62	67	66	67	67	69	67	63	60	63	64	68	72	73	73	71	69	68	66	61	56	52	45	34	34		81.4
103	5/17	M-16	20-434	Base			56	51		57	51	60	63	63	65	66	66	63	61	61	59	63	66	71	75	76	77	77	73	70	66	65	59	58	50	43	38		84.0
103	5/17	M-16	20-434	Base			59			62	61	64	68	70	70	70	67	67	64	60	58	60	60	63	66	66	68	67	64	61	60	54	46	44	37		29		79.1
103	5/17	M-16	20-434	Base			52	52	53	52	54	59	62	61	61	62	61	59	57	55	54	53	55	57	58	60	60	60	59	56	54	49	44	40	35		34		72.2
103	5/17	M-16	20-434	Base				52		55	60	63	66	66	67	67	66	67	65	61	60	59	56	58	61	60	60	61	60	57	54	51	42	42	33		34		76.3
103	5/17	M-16	20-434	Base	54		51	52		57	63	60	63	63	62	61	58	60	59	58	50	55	54	56	58	58	56	57	56	44	50	46		40	36		29		72.6
103	5/17	M-16	20-434	Base			55	55	51	59	62	62	65	66	68	66	65	64	63	62	59	58	57	57	61	61	62	61	61	58	57	51	41	43	32		29		76.3
103	5/17	M-16	20-434	Base			55			56	60	65	66	67	69	67	68	66	64	63	61	62	61	64	67	67	69	68	66	62	60	58	53	47	41	45	38		79.0
103	5/17	M-16	20-434	Base			60	55		51	57	55	56	58	60	62	60	60	59	56	47	54	53	57	61	61	64	67	65	58	58	57	50	46	40	37	39		74.0
103	5/17	M-16	20-434	Base			50	56		49	57	63	67	68	69	70	67	68	66	64	62	60	58	61	63	63	66	64	62	61	58	53	46	41	32	27	30		78.3
103	5/17	M-16	20-434	Base			55	53	49	57	57	59	62	63	64	63	62	61	59	55	55	55	54	58	62	61	60	61	59	56	54	49	39	35	27		30		73.5
103	5/17	M-16	20-434	Base			58		56	62	63	65	66	68	69	69	69	69	67	65	64	65	65	68	73	74	74	72	72	73	71	68	62	57	53	48	38	29	83.4

Col.	Date	Event Type	Event Dist. (m)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall SEL
103	5/17	M-16	20-434	Base			55	51		57	61	62	66	66	67	68	64	67	64	61	54	59	60	62	66	65	65	62	61	58	55	51	42	45			35		77.2
103	5/17	M-16	20-434	Base	55		58			63	56	58	64	62	64	64	65	63	59	57	53	57	57	60	63	61	61	62	60	58	54	51	42	41			35		74.7
103	5/17	M-16	20-434	Base				53		58	57	58	65	63	66	66	64	63	61	59	58	58	56	58	63	63	64	63	63	61	56	54	49	43	34		30		75.7
103	5/17	M-16	20-434	Base			58			56	59	59	63	64	63	63	63	63	60	60	56	58	58	58	62	63	63	62	60	56	54	51	50	42	32		29		74.5
103	5/17	M-16	20-434	Base			55			57	54	55	60	60	60	61	61	61	59	58	56	55	52	54	59	60	59	58	57	52	51	47	37	38	32		33		71.7
103	5/17	M-16	20-434	Base			52	53		57	59	60	62	65	64	64	64	64	63	59	58	61	65	69	74	77	79	77	72	73	69	70	66	63	62	57	48	27	84.8
103	5/17	M-16	20-434	Base	51		57	51		56	56	61	65	66	67	68	65	64	63	59	57	57	57	59	63	64	65	64	63	59	56	54	46	43	37		30	30	76.6
103	5/17	M-16	20-434	Base	48		48			50	57	59	60	64	61	62	62	62	58	58	55	57	56	58	62	62	61	60	58	52	51	45	35	37	34		37		73.1
103	5/17	M-16	20-434	Base				58		60	62	64	65	69	70	69	68	70	69	66	65	68	73	75	76	78	80	79	79	78	75	72	73	66	61	58	50	29	87.9
103	5/17	M-16	20-434	Base	51		48			59	58	61	63	65	64	67	65	64	65	61	57	58	55	54	62	60	59	61	58	54	54	50	41	41			32		75.2
103	5/17	M-16	20-434	Base		48	48	51	45	56	61	65	64	67	67	68	66	67	66	64	65	67	72	75	76	77	80	79	78	78	75	72	72	66	61	57	49	27	87.4
103	5/17	M-16	20-434	Base	48	53		53	47	58	60	63	64	68	67	67	66	68	66	63	63	65	67	72	75	76	75	71	73	74	70	69	61	59	51	42	36		84.0
103	5/17	M-16	20-434	Base	48			48	53	50	57	61	63	62	63	63	63	63	60	59	55	55	54	59	60	60	60	60	59	50	51	47	37	40			35		73.5
103	5/17	M-16	20-434	Base			53	54	42	55	57	58	61	62	62	62	62	61	59	57	57	56	54	55	60	59	61	59	57	50	52	47	41	35	33		30		72.6
103	5/17	M-16	20-434	Base	51		55		56	60	62	64	65	68	68	69	65	67	66	64	62	61	58	60	66	65	66	65	63	60	57	52	45	41	38	46	34		78.2
103	5/17	M-16	20-434	Base	55		58	59	56	60	61	61	68	67	66	66	64	67	65	62	65	66	67	70	75	77	79	79	77	73	68	68	60	62	52	48	41	29	86.0
103	5/17	M-16	20-434	Base	54		61	56		58	58	64	70	70	68	71	68	68	66	65	64	67	72	75	76	80	81	79	78	74	72	73	67	65	64	62	55	32	87.9
103	5/17	M-16	20-434	Base	58		52	55	45	60	61	64	67	69	68	68	69	68	67	64	62	61	60	64	66	68	68	66	65	63	58	56	50	45	40	30	35		79.2
103	5/17	M-16	20-434	Base			53	50		58	58	55	62	63	64	63	62	60	60	58	53	56	56	58	61	65	67	67	62	56	59	60	54	44	42	35	30		75.4
103	5/17	M-16	20-434	Base	53			45		56	56	57	63	65	63	65	64	62	61	60	55	56	54	60	61	63	61	62	60	55	53	49	38	38	27		30		74.3
103	5/17	M-16	20-434	Base			56			53	59	60	64	65	65	65	63	62	60	57	52	52	51	56	60	60	61	59	58	53	51	47	34	36	32		30		74.1
103	5/17	M-16	20-434	Base				50	53	54	57	61	65	66	67	67	66	65	61	61	60	63	68	71	73	72	77	75	73	70	65	64	60	59	53	45	36	27	83.2
103	5/17	M-16	20-434	Base			52	56		57	60	64	67	68	69	68	66	66	64	64	62	65	68	71	73	76	74	71	71	74	70	67	63	58	52	47	40		83.4
103	5/17	M-16	20-434	Base	56		52	54	45	56	59	60	64	64	65	65	65	65	63	61	59	57	58	63	65	63	64	64	63	60	57	53	46	39	35		27		76.3
103	5/17	M-16	20-434	Base	54		53	53		51	52	55	59	64	66	63	62	64	61	62	56	57	54	56	60	59	59	59	58	54	51	48	38	38			33		73.8
103	5/17	M-16	20-434	Base	51		54	53	42	58	62	64	65	68	66	68	68	66	63	61	60	58	58	61	65	66	66	65	65	61	56	52	46	41	34				77.9
103	5/17	M-16	20-434	Base			53	53	45	55	56	60	62	62	64	67	67	66	62	60	59	57	56	60	61	62	63	62	61	58	54	50	42	42	34		32		75.6
103	5/17	M-16	20-434	Base	51		58			58	54	54	60	61	61	62	61	63	62	56	50	54	52	50	55	53	53	54	53	49	49	44	32	39	27		37		71.6
103	5/17	M-16	20-434	Base	51		52	45		52	55	56	59	62	63	65	61	63	62	60	57	57	54	55	61	62	62	64	59	57	52	50	41	37	34		35		73.8
103	5/17	M-16	20-434	Base			56	50		52	57	56	60	61	59	60	60	59	58	56	52	53	51	49	54	56	56	56	55	50	49	47	35	35	30		30		70.4
103	5/17	M-16	20-434	Base						55	57	59	63	63	64	64	63	60	60	60	56	55	53	53	56	57	56	55	56	48	50	46	34	37	27		32		72.7
103	5/17	M-16	20-434	Base			45	48	42	58	61	62	64	64	65	65	64	65	62	60	57	59	61	64	69	70	70	70	71	69	64	62	56	50	43	34	33	30	79.6
103	5/17	M-16	20-434	Base			45		45	55	60	63	63	67	67	66	64	65	63	62	58	58	57	58	62	60	61	61	60	56	54	49	42	38	27		30		75.8
103	5/17	M-16	20-434	Base	48		56	55		55	56	59	62	63	63	62	61	62	61	59	55	55	53	52	57	56	55	56	55	50	49	44	34	37	30		32		72.5
103	5/17	M-16	20-434	Base	61		56	56	55	57	57	60	65	66	64	67	65	65	64	63	59	59	57	59	60	59	60	58	57	53	52	48	38	39			34		75.8
103	5/17	M-16	20-434	Base			50	51		57	58	59	65	67	68	64	66	67	64	63	64	62	64	67	68	71	72	71	68	66	64	59	54	51	45	32	35		80.3
103	5/17	M-16	20-434	Base			52		52	61	59	65	67	69	68	69	68	68	66	64	62	63	63	66	69	69	69	68	70	69	69	61	56	54	49	34	34		80.7
103	5/17	M-16	20-434	Base			58	45	45	60	61	64	67	69	70	70	70	70	68	63	62	60	60	63	65	64	64	64	62	61	57	51	44	39	35		32		79.2
103	5/17	M-16	20-434	Base	54		45	48	45	57	57	62	64	65	66	67	65	65	67	65	63	61	58	60	62	62	63	62	60	57	54	51	43	40	35		35		76.7
103	5/17	M-16	20-434	Base	51		55	51	59	55	59	62	66	66	67	66	66	64	62	62	61	59	59	63	63	65	65	63	62	60	55	50	40	40	35	37	27		76.8
103	5/17	M-16	20-434	Base			55			55	57	56	61	60	61	61	59	60	59	57	54	54	55	61	62	63	62	58	60	56	54	51	45	43	34		32		72.7
103	5/17	M-16	20-434	Base	55		55	56		54	60	64	64	66	65	67	65	65	64	62	60	60	57	59	63	62	62	61	60	56	54	49	44	41	35		35		76.2
103	5/17	M-16	20-434	Base	48		54	52		50	55	58	61	63	63	62	62	62	61	59	56	55	54	56	58	59	57	58	60	56	52	47	37	32	30		37		72.8
103	5/17	M-16	20-434	Base	54		52	45		57	61	61	66	66	67	67	67	67	64	64	63	62	59	62	64	63	64	63	61	58	55	50	41	40	34		33		77.3

Col.	Date	Event	Event	Mic	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																	Calc.
		Type	Dist. (m)	Pos.	10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Overall SEL
103	5/17	M-16	20-434	Base	54		52	50		55	54	47	59	60	61	62	62	65	64	58	57	58	53	57	60	60	59	56	57	53	51	46	39	39	34		32	27	72.9
103	5/17	M-16	20-434	Base	51		48	51	50	57	57	60	63	64	65	65	66	66	65	63	59	59	57	59	61	61	60	59	59	54	52	49	42	39			32		75.5
103	5/17	M-16	20-434	Base			53	45		54	58	59	62	64	63	64	64	63	61	61	58	58	58	59	63	65	70	67	65	63	60	57	57	54	52	42	33		76.7
103	5/17	M-16	20-434	Base	48		53	45		45	48	55	61	61	60	59	60	63	61	59	59	60	62	66	69	72	73	69	65	63	61	55	53	53	49	51	46	27	78.6
103	5/17	M-16	20-434	Base	48		53	45		56	53	54	58	59	58	60	59	60	56	56	53	53	53	55	58	57	57	57	54	47	49	45	27	35	27	41	32		70.2
103	5/17	M-16	20-434	Base	51		53	52		56	54	57	61	63	64	63	63	65	63	60	59	56	53	54	59	57	57	55	55	51	52	49	37	39	30		30		73.3
103	5/17	M-16	20-434	Base	48		55			59	58	55	62	61	61	62	63	63	60	59	55	57	54	54	57	57	58	57	56	50	48	44	32	35	27				72.5
103	5/17	M-16	20-434	Base			55	45	45	50	56	55	61	63	63	64	63	61	61	59	54	59	60	62	65	67	70	70	68	64	58	59	56	57	47	43	32		77.6
103	5/17	M-16	20-434	Base			55	51		54	54	54	60	60	59	61	60	58	58	56	53	50	51	51	58	58	58	57	54	47	50	44	35	27	27				70.5

Table D 7. Summary data for passive helicopter flights on Fort Stewart, GA.

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	RCW Resp.	Rec. time (min)	Mic Pos.	SEL (dB)	
								Flat	A
6	4/21/99	I-2	Helicopter	150	0		Base	100.2	87.6
6	4/26/99	I-6	Helicopter	300	0		Base	92.9	75.0
6	4/29/99	I-9	Helicopter	100	0		Base	104.4	88.0
10	5/27/99	N-2	Helicopter	300	0		Base	90.3	82.5
23	4/28/99	I-3	Helicopter	250	0		Base	97.7	78.7
25	5/5/99	I-9	Helicopter	400	0		Base	84.8	71.6
44	4/21/99	I-2	Helicopter	200	0		Base	98.5	86.1
44	4/21/99	I-2	Helicopter	250	0		Base	95.3	85.4
56	4/15/99	Inactive	Helicopter	300	0		Base	93.6	84.3
56	4/15/99	Inactive	Helicopter	300	0		Cavity	102.5	91.2
83	5/19/99	I-2	Helicopter	250	0		Base	99.2	84.9
143	4/21/99	I-6	Helicopter	300	0		Base	93.3	84.1
151	5/4/99	I-6	Helicopter	300	0		Base	91.0	82.7
218	4/20/99	I-1	Helicopter	400	0		Base	85.1	74.5
218	4/20/99	I-1	Helicopter	300	0		Base	93.8	82.7

Table D 8. Representative unweighted noise spectra for passive helicopter flights on Fort Stewart, GA.

Col.	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	RCW Resp.	Rec. time (min)	Mic Pos.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc. Overall SEL
								10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	
6	4/21	I-2	Helo	150	0		Base	68	67	84	95	91	84	90	91	90	83	85	81	84	84	82	81	82	81	80	79	78	76	75	74	74	71	68	65	61	58	55	55	57	59	100.2
6	4/26	I-6	Helo	300	0		Base	68	78	70	71	82	73	85	87	86	82	81	79	76	71	71	68	56	67	67	59	66	65	54	62	61	37	60	58		49	45		46	32	92.9
6	4/29	I-9	Helo	100	0		Base	87	88	75	87	93	90	95	96	97	98	94	91	87	86	83	80	81	82	81	78	78	76	71	71	70	47	65	63		56	49		51		104.4
10	5/27	N-2	Helo	300	0		Base	66		71	72	83	80	72	77	77	83	74	76	81	71	74	72	69	75	75	76	76	73	66	68	66	31	62	60		53	46		51	31	90.3
23	4/28	I-3	Helo	250	0		Base	81	84	64	83	89	87	87	89	90	88	86	84	80	78	74	69	70	71	72	70	67	63	61	57	55	50	51	57	52	50	50	49	55	57	97.7
25	5/5	I-9	Helo	400	0		Base	56	59	70	76	65	70	77	72	77	76	77	66	65	65	62	65	68	68	66	63	60	57	53	49	48	37	52	50	36	35	29		29		84.8
44	4/21	I-2	Helo	200	0		Base	65	64	87	92	88	80	90	89	89	83	84	82	85	80	76	74	75	80	82	80	76	74	73	70	69	66	61	56	49	43	40	34	37	30	98.5
44	4/21	I-2	Helo	250	0		Base	65	62	71	90	78	72	85	84	82	82	86	81	84	79	77	77	77	78	80	79	77	74	71	69	67	63	58	52	46	42	40	32	37	29	95.3
56	4/15	Inactive	Helo	300	0		Base	55	60	83	87	76	73	84	84	80	78	83	80	83	76	71	70	75	79	81	79	75	71	69	66	64	60	55	50	44	42	39	28	33	22	93.6
56	4/15	Inactive	Helo	300	0		Cavity	57	60	82	86	76	71	81	80	76	72	79	85	96	101	89	80	75	71	69	68	64	63	63	56	59	56	51	50	46	44	43	36	37	30	102.5
83	5/19	I-2	Helo	250	0		Base	59	62	84	96	88	79	89	88	88	82	83	78	78	74	75	80	82	79	77	78	74	73	71	68	66	63	59	54	46	43	40	31	36	25	99.2
143	4/21	I-6	Helo	300	0		Base	53	59	82	85	85	74	83	84	81	76	79	76	80	74	70	73	78	79	80	77	74	72	70	66	64	59	53	48	41	42	38	27	34	23	93.3
151	5/4	I-6	Helo	300	0		Base	78		82	79	69	80	80	66	80	83	71	80	76	66	77	76	63	76	76	71	75	74	65	70	70	38	69	68		61	53		56	38	91.0
218	4/20	I-1	Helo	400	0		Base	54	56	56	59	80	77	64	75	74	76	67	64	72	69	67	64	67	67	68	68	67	64	62	59	55	48	45	41	24	36	30		31	18	85.1
218	4/20	I-1	Helo	300	0		Base	59	60	57	68	87	87	70	82	84	86	82	76	76	72	74	74	76	77	75	75	74	73	71	69	67	64	61	57	53	48	43	34	36	26	93.8

Table D 9. Summary data for passive large-caliber live fire noise on Fort Stewart, GA.

Cluster	Date	Nesting Phase & Day	Event Type	Event Dist. (m)	Azim. re. DOF	RCW Response	Rec. time (min)	Remarks	Mic Pos.	SEL (dB) at mic Flat	A
10	5/27	N-2	Artillery	0	0	0	0		Base	79.6	50.1
25	5/5	I-9	Artillery	0	0	0	0		Base	90.6	62.2
25	5/5	I-9	Artillery	0	0	0	0		Base	90.3	62.3
25	5/5	I-9	Artillery	0	0	0	0		Base	91.1	62.0
25	5/5	I-9	Artillery	0	0	0	0		Base	91.3	65.1
25	5/5	I-9	Artillery	0	0	0	0		Base	90.5	61.6
83	5/2	I-2	25 mm	0	0	0	0		Base	68.8	53.3
83	5/2	I-2	25 mm	0	0	0	0		Base	68.0	56.5
83	5/2	I-2	25 mm	0	0	0	0		Base	69.8	58.1
83	5/2	I-2	25 mm	0	0	0	0		Base	70.3	57.9
83	5/2	I-2	25 mm	0	0	0	0		Base	72.8	62.1
83	5/19	I-2	25 mm	0	0	0	0		Base	60.1	45.1
83	5/19	I-2	25 mm	0	0	0	0		Base	59.5	45.2
143	4/21	I-6	Artillery	0	0	0	0		Base	79.5	49.0
159	5/6	I-5	Tank blast	0	0	0	0		Base	86.3	70.8
159	5/6	I-5	Tank blast	0	0	0	0		Base	86.4	71.3
172	4/27	N-0	Artillery	0	0	0	0		Base	101.8	85.6
172	4/27	N-0	Artillery	0	0	0	0		Base	103.0	83.5

Table D 10. Representative unweighted noise spectra for passive large-caliber live fire events on Fort Stewart, GA.

Col.	Date	Nesting Phase & Day	Event Type	RCW Resp.	Band SEL (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc. Overall SEL
					10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150		5000	6300	8000	10000	12500	16000	20000	
10	5/27	N-2	Art	0	73	72	72	70	66	69	70	61	61	64	61	58	53	44	42	40	35	41	38	30	38	36	0	33	34	0	32	30	0	24	20	0	21	0	79.6
25	5/5	I-9	Art	0	82	83	83	81	80	79	79	79	75	76	71	69	67	63	61	57	53	50	48	42	41	39	35	35	35	28	36	33	31	31	22	8	21	8	90.6
25	5/5	I-9	Art	0	73	78	83	80	82	83	79	81	79	75	74	66	61	63	63	58	53	47	43	39	38	37	36	34	34	29	31	30	20	24	22		17	11	90.3
25	5/5	I-9	Art	0	78	84	81	83	80	84	83	74	78	75	68	69	65	65	61	57	53	49	47	41	41	38	36	33	33	36	41	32	14	24	21	13	17		91.1
25	5/5	I-9	Art	0	81	86	81	81	77	82	79	77	81	77	73	70	68	65	64	62	60	57	53	47	42	44	40	36	36	31	38	38	26	26	21	21	19		91.3
25	5/5	I-9	Art	0	82	84	83	81	79	80	78	76	76	76	75	68	60	61	59	55	50	48	44	42	40	38	34	35	34	33	36	35	33	27	19		17		90.5
83	5/2	I-2	25 mm	0	50	55	58	56	55	57	57	62	62	51	52	60	48	45	48	47	48	47	48	45	43	40	35	31	30	21	28	24		15	7		12		68.8
83	5/2	I-2	25 mm	0	48	55	58	58	57	57	58	60	49	51	56	56	50	48	52	52	52	51	52	49	47	44	39	33	30	28	29	25		14	12		10		68.0
83	5/2	I-2	25 mm	0	49	57	60	59	58	59	61	60	55	54	59	57	52	48	54	53	51	53	54	51	48	46	40	35	33	25	30	27		21	13		18		69.8
83	5/2	I-2	25 mm	0	47	55	58	57	56	58	63	65	58	55	59	55	52	51	53	54	53	52	54	50	47	44	40	34	31	21	26	26		17	10		12		70.3
83	5/2	I-2	25 mm	0	50	58	61	60	56	61	63	63	58	65	61	62	59	54	56	58	56	56	59	55	51	48	42	37	34	25	30	28	15	22	16		16		72.8
83	5/19	I-2	25 mm	0		43	50	51	49	43	40	46	44	48	53	53	49	43	39	37	29	35	34	29	33	34	20	30	36	26	28	21		20	15		13		60.1
83	5/19	I-2	25 mm	0	37	46	48	50	50	35	39	47	44	48	51	53	47	43	39	36	31	35	35	26	32	33	26	30	32	36	33	26		20	13		17		59.5
143	4/21	I-6	Art	0	68	71	74	74	71	64	58	60	66	54	55	53	48	47	45	43	42	44	41	36	38	35	20	32	32		29	28		18	15		13		79.5
159	5/6	I-5	Tank	0	66	76	76	72	72	79	78	74	76	74	74	70	68	68	68	66	64	63	62	62	60	59	57	56	55	54	52	51	50	48	47	45	43	40	86.3
159	5/6	I-5	Tank	0	60	76	78	74	72	77	78	73	76	76	72	71	70	69	67	67	65	64	64	62	61	59	58	57	55	54	53	51	50	48	47	44	42	37	86.4
172	4/27	N-0	Art	0	85	87	88	90	91	92	93	90	96	92	85	86	84	80	78	77	76	79	79	79	75	73	74	70	68	65	63	63	63	64	65	66	68	70	101.8
172	4/27	N-0	Art	0	87	88	87	89	94	95	93	97	93	88	86	92	84	80	78	78	76	77	75	75	71	68	65	63	62	61	61	61	62	63	65	66	68	70	103.0

Table D 11. Summary data for ambient sound levels on Fort Stewart, GA.

Cluster	Date	Nesting Phase & Day	Event Type	Mic Pos.	AVG. LEQ (dB)	
					Flat	A
179	07-Jun-99	Post-fled.	Ambient	Cavity	53.6	43.0
179	07-Jun-99	Post-fled.	Ambient	Base	48.8	44.2
71	07-Jun-99	Post-fled.	Ambient	Cavity	62.4	41.2
71	07-Jun-99	Post-fled.	Ambient	Base	49.2	41.0
35	07-Jun-99	N-12	Ambient		49.2	43.8
107	17-Jun-99	Post-fled.	Ambient	Base	50.1	43.0
107	17-Jun-99	Post-fled.	Ambient	Cavity	62.7	46.9
216	18-Jun-99	Post-fled.	Ambient	Base	53.7	43.6
216	18-Jun-99	Post-fled.	Ambient	Cavity	66.5	45.8
129	24-May-99	N-7	Ambient	Base	64.8	56.9
159	06-May-99	I-5	Ambient	Base	52.5	41.5
159	21-May-99	N-9	Ambient	Base	50.2	41.9
162	03-Jun-99	Post-fled.	Ambient	Base	52.7	41.6
162	03-Jun-99	Post-fled.	Ambient	Cavity	61.3	50.8
30	03-Jun-99	Post-fled.	Ambient	Base	48.0	39.9
30	03-Jun-99	Post-fled.	Ambient	Cavity	47.9	40.0
127	03-Jun-99	Post-fled.	Ambient	Base	61.6	51.6
127	03-Jun-99	Post-fled.	Ambient	Cavity	56.9	45.8
134	15-Jun-99	I-7	Ambient	Base	49.5	40.7
23	03-May-99	I-8	Ambient	Base	60.4	53.7
103	17-May-99	0	Ambient	Base	66.2	58.3
41	02-Jun-99	I-8	Ambient	Base	50.2	42.3
3	22-Jun-99	N-17	Ambient	Base	67.4	59.5
103	12-May-99	N-2	Ambient	Base	59.3	51.4
103	12-May-99	N-2	Ambient	Base	59.4	51.8
70	20-May-99	I	Ambient	Base	57.7	50.0
218	23-Apr-99	I-4	Ambient	Base	64.8	56.5
189	23-Apr-99	I-1	Ambient	Base	53.0	42.3
118	18-Jun-99	N-14	Ambient	Base	53.7	46.0
174	01-Jun-99	N-22	Ambient	Base	49.4	41.5
41	01-Jun-99	I-7	Ambient	Base	49.5	42.5
17	01-Jun-99	I-1	Ambient	Base	49.5	41.6
120	17-May-99	I-5	Ambient	Base	48.2	41.5
36	17-May-99	I-4	Ambient	Base	48.8	41.1
194	17-May-99	N-21	Ambient	Base	47.8	41.2
271	03-Jun-99	Post-fled.	Ambient	Base	50.4	42.3

Cluster	Date	Nesting Phase & Day	Event Type	Mic Pos.	AVG. LEQ (dB) Flat	A
227	03-Jun-99	Post-fled.	Ambient	Base	49.9	42.0
227	03-Jun-99	Post-fled.	Ambient	Cavity	48.9	41.0
87	03-Jun-99	Post-fled.	Ambient	Base	51.0	41.3
87	03-Jun-99	Post-fled.	Ambient	Cavity	48.8	41.0
172	04-Jun-99	Post-fled.	Ambient	Base	49.7	41.3
172	04-Jun-99	Post-fled.	Ambient	Cavity	48.7	40.9
47	04-Jun-99	Post-fled.	Ambient	Base	48.8	41.2
47	04-Jun-99	Post-fled.	Ambient	Cavity	48.8	41.0
183	07-Jun-99	Post-fled.	Ambient	Base	48.7	42.6
183	07-Jun-99	Post-fled.	Ambient	Cavity	48.6	40.7
75	07-Jun-99	Post-fled.	Ambient	Base	49.9	43.0
75	07-Jun-99	Post-fled.	Ambient	Cavity	49.0	41.1
10	27-May-99	N-2	Ambient	Base	53.4	42.7
137	28-May-99	I-8	Ambient	Base	49.3	40.5
294	28-May-99	N-6	Ambient	Base	49.2	41.6
176	28-May-99	N-9	Ambient	Base	48.8	42.7
35	19-May-99	I-4	Ambient	Base	50.2	41.6
165	26-May-99	I-1	Ambient	Base	51.2	41.2
165	26-May-99	I-1	Ambient	Cavity	48.5	40.8
44	27-Apr-99	I-8	Ambient	Base	49.7	41.4
189	27-Apr-99	I-5	Ambient	Base	50.2	41.2
35	16-May-99	I-1	Ambient	Base	47.2	42.9
36	16-May-99	I-8	Ambient	Base	46.5	40.1
129	16-May-99	I-10	Ambient	Base	47.4	39.8
137	18-May-99	Pre-nest.	Ambient	Base	49.4	40.5
7	18-May-99	Between	Ambient	Base	50.4	39.5
163	18-May-99	I-6	Ambient	Base	47.3	39.7
41	28-May-99	I-5	Ambient	Base	47.9	41.2
80	28-May-99	N-0	Ambient	Base	49.7	42.9
2	28-May-99	I-7	Ambient	Base	46.7	38.9
10	28-May-99	N-3	Ambient	Base	49.0	41.2
67	28-Apr-99	I-4	Ambient	Base	52.3	44.0
13	14-May-99	N-4	Ambient	Base	51.8	40.0
31	14-May-99	N-6	Ambient	Base	48.4	39.1
32	16-May-99	N-0	Ambient	Base	49.5	40.8
5	16-May-99	I-4	Ambient	Base	50.1	40.4
141	16-May-99	N-5	Ambient	Base	49.5	40.0

Cluster	Date	Nesting Phase & Day	Event Type	Mic Pos.	AVG. LEQ (dB)	
					Flat	A
177	16-May-99	N-2	Ambient	Base	48.7	39.4
120	16-May-99	I-4	Ambient	Base	46.6	38.9
80	16-May-99	Egg laying	Ambient	Base	47.4	41.1
1	10-May-99	I-7	Ambient	Base	47.8	39.1
122	13-May-99	N-1	Ambient	Base	47.9	39.4
132	13-May-99	I-7	Ambient	Base	48.5	40.8
73	13-May-99	N-8	Ambient	Base	49.6	39.6
37	13-May-99	I-5	Ambient	Base	50.0	40.2
189	03-May-99	N-0	Ambient	Base	51.0	40.8
82	29-Apr-99	I-8	Ambient	Base	49.7	41.5
159	29-Apr-99	Egg laying	Ambient	Base	48.7	41.6
71	02-May-99	I-3	Ambient	Base	15.3	11.9
68	02-May-99	Egg laying	Ambient	Base	15.3	11.9
38	02-May-99	I-9	Ambient	Base	48.5	39.3
34	02-May-99	Egg laying	Ambient	Base	51.8	40.9
174	03-May-99	I-5	Ambient	Base	47.0	41.0
174	28-Apr-99	I-5	Ambient	Base	47.9	39.8
89	28-Apr-99	I-4	Ambient	Base	51.5	42.1
203	16-Jun-99	Non-nest.	Ambient	Base	50.7	38.0
118	16-Jun-99	N-12	Ambient	Base	47.2	37.1
159	17-Jun-99	Post	Ambient	Base	47.1	38.1
159	17-Jun-99	Post	Ambient	Cavity	58.5	46.2
44	21-Apr-99	I-2	Ambient	Base	50.2	38.1
41	04-Jun-99	I-10	Ambient	Base	49.0	38.1
135	09-Jun-99	Incubation	Ambient	Base	53.5	38.6
130	09-Jun-99	Incubation	Ambient	Base	50.8	37.7
112	09-Jun-99	N-3	Ambient	Base	49.6	38.4
1	09-Jun-99	I-8	Ambient	Base	47.3	38.0
129	15-Jun-99	Post	Ambient	Base	46.2	39.4
129	15-Jun-99	Post	Ambient	Cavity	48.3	39.2
8	04-May-99	N-4	Ambient	Base	48.6	38.1
194	13-Apr-99	Pre-nest.	Ambient	Cavity	52.5	42.6
194	13-Apr-99	Pre-nest.	Ambient	Base	51.7	40.5
56	15-Apr-99	Inactive	Ambient	Base	55.1	42.2
56	15-Apr-99	Inactive	Ambient	Cavity	60.6	48.4
51	29-Apr-99	N-2	Ambient	Base	50.6	41.5
61	28-May-99	N-3	Ambient	Base	48.3	41.5

Cluster	Date	Nesting Phase & Day	Event Type	Mic Pos.	AVG. LEQ (dB) Flat	A
88	28-May-99	Incubation	Ambient	Base	47.4	41.4
82	28-May-99	N-0	Ambient	Base	48.7	42.3
48	01-Jun-99	Post-fled.	Ambient	Base	48.6	40.6
48	01-Jun-99	Post-fled.	Ambient	Cavity	54.8	42.6
57	02-Jun-99	Post-fled.	Ambient	Base	46.8	40.3
57	02-Jun-99	Post-fled.	Ambient	Cavity	45.9	38.2
205	02-Jun-99	Post-fled.	Ambient	Base	47.3	40.0
205	02-Jun-99	Post-fled.	Ambient	Cavity	47.2	40.4
132	11-May-99	I-5	Ambient	Base	52.3	43.4
17	11-May-99	Incubation	Ambient	Base	47.7	41.6
122	11-May-99	I-10	Ambient	Base	45.9	38.1
189	29-Apr-99	I-7	Ambient	Base	50.2	39.7
17	11-May-99	Incubation	Ambient	Base	47.7	41.6
122	11-May-99	I-10	Ambient	Base	45.9	38.1
36	15-Jun-99	Post-fled.	Ambient	Base	46.3	42.6
36	15-Jun-99	Post-fled.	Ambient	Cavity	47.8	40.7
296	20-Jun-99	N-9	Ambient	Base	47.0	39.8
83	23-Jun-99	Post-fled.	Ambient	Base	49.5	41.9
83	23-Jun-99	Post-fled.	Ambient	Cavity	55.3	43.9
143	21-Apr-99	I-6	Ambient	Base	46.5	38.8
83	02-May-99	I-2	Ambient	Base	50.9	42.2
25	26-May-99	I-9	Ambient	Base	55.6	46.9
103	13-May-99	N-3	Ambient	Base	57.4	49.4
83	19-May-99	I-2	Ambient	Base	48.0	39.8
151	14-Jun-99	Post-fled.	Ambient	Base	51.3	43.7
151	14-Jun-99	Post-fled.	Ambient	Cavity	54.3	43.7
206	14-Jun-99	Post-fled.	Ambient	Base	57.4	51.2
88	18-Jun-99	Post-fled.	Ambient	Base	47.5	40.6
216	22-Jun-99	I-8	Ambient	Base	47.1	39.3
118	22-Jun-99	N-18	Ambient	Base	47.0	41.0
10	14-Jun-99	N-20	Ambient	Base	49.4	37.0

Table D 12. Representative unweighted noise spectra for ambient sound levels on Fort Stewart, GA.

Col.	Date	Nesting Phase Day	Event Type	Mic Pos.	Band LEQ (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc. Overall LEQ
					10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	
1	05/10/99	I-7	Ambient	Base	36	34	37	36	30	39	37	31	38	35	22	37	33	23	34	33	18	33	32	25	31	30	22	27	27	12	26	24	2	18	12		15		47.8
1	06/09/99	I-8	Ambient	Base	32	31	38	38	38	37	36	32	37	34	25	35	31	18	32	31	16	31	29	21	29	28	13	26	28	23	26	23	26	19	13		16		47.3
2	05/28/99	I-7	Ambient	Base	27	21	35	35	30	38	36	27	38	34	24	37	32	21	33	32	14	32	31	23	29	29	9	28	28	16	29	27		22	14		16	1	46.7
3	06/22/99	N-17	Ambient	Base	53		58	54	37	58	56	44	59	56	47	58	54	38	54	54	41	52	51	45	49	49	36	48	47		49	50		40	29		34	16	67.4
5	05/16/99	I-4	Ambient	Base	40	36	39	42	35	39	39	34	40	38	33	37	34	23	34	33	16	33	32	25	32	30	21	28	29	27	28	28	27	20	10		15		50.1
7	05/18/99	Between	Ambient	Base	38	32	37	35	29	38	41	46	39	37	29	38	33	22	34	33	18	33	32	25	31	30	18	27	27		27	25	24	27	14		15		50.4
8	05/04/99	N-4	Ambient	Base	36	37	37	38	35	38	39	36	38	38	35	37	34	25	32	32	22	32	31	21	29	28	20	26	25	14	28	23		18	10		15	1	48.6
10	05/27/99	N-2	Ambient	Base	39	34	42	42	46	42	43	37	42	42	39	42	39	35	37	36	25	36	35	26	34	33	23	31	31	17	31	31	14	23	15		16	0	53.4
10	05/28/99	N-3	Ambient	Base	34	32	40	37	36	39	38	35	39	37	31	38	34	18	34	33	19	33	33	24	31	30	20	32	31	28	31	25	10	25	15		15		49.0
10	06/14/99	N-20	Ambient	Base	38	40	39	37	37	38	37	39	38	39	37	36	34	30	28	27	23	24	24	24	24	22	20	26	29	29	25	20	14	19	18	15	24	25	49.4
13	05/14/99	N-4	Ambient	Base	41	40	43	42	42	41	41	39	41	38	33	37	34	24	34	33	22	33	33	25	31	31	23	29	29	13	27	24	4	19	10		14		51.8
17	05/11/99	Incubation	Ambient	Base	36	33	37	37	28	36	35	30	36	34	25	35	31	22	34	35	34	37	36	32	33	31	19	27	26	5	26	23	14	31	16	11	16	1	47.7
17	05/11/99	Incubation	Ambient	Base	36	33	37	37	28	36	35	30	36	34	25	35	31	22	34	35	34	37	36	32	33	31	19	27	26	5	26	23	14	31	16	11	16	1	47.7
17	06/01/99	I-1	Ambient	Base	36		38	36	17	39	38	27	41	37	27	40	36	23	37	36	21	36	35	28	33	32	19	28	28		28	28		22	14		16		49.5
23	05/03/99	I-8	Ambient	Base	52	52	51	48	46	45	44	41	45	47	42	46	43	42	43	40	43	47	49	49	46	42	37	34	33	19	30	27	34	24	15		17		60.4
25	05/26/99	I-9	Ambient	Base	37	42	43	43	45	44	46	45	48	46	42	41	35	26	35	35	26	35	34	29	32	31	21	28	29	24	44	35		21	14		14		55.6
30	06/03/99	Post-fled.	Ambient	Base	35		37	33	27	38	36	26	40	36	22	39	34	24	35	35	20	34	33	26	31	30	19	27	26		29	27		22	13		14		48.0
30	06/03/99	Post-fled.	Ambient	Cavity	35		36	36		39	36	15	39	36	20	39	35	22	35	34	20	33	33	28	30	30	20	27	27		30	29		23	13		16		47.9
31	05/14/99	N-6	Ambient	Base	34	28	39	41	36	38	37	27	38	37	25	37	33	19	34	32	19	32	31	21	30	30	19	27	27	6	28	27		23	12		14		48.4
32	05/16/99	N-0	Ambient	Base	38	30	40	40	39	39	38	31	39	37	25	38	34	21	34	34	21	34	32	24	31	31	23	28	27	18	31	32	23	19	12		13	0	49.5
34	05/02/99	Egg laying	Ambient	Base	44	43	43	40	39	39	39	36	38	39	36	36	33	26	35	34	29	36	35	31	33	31	22	27	27	15	26	21		18	10		19	7	51.8
35	05/16/99	I-1	Ambient	Base	31	14	35	37	27	37	36	30	37	34	27	35	30	13	31	31	17	30	30	21	29	28	16	27	29	26	37	38		20	14		16	3	47.2
35	05/19/99	I-4	Ambient	Base	40	32	38	36	30	39	37	18	41	36	30	44	36	24	37	35	21	35	35	28	33	32	25	30	29		28	27		21	12		17		50.2
35	06/07/99	N-12	Ambient	Base	35		37	36	25	39	37	26	39	35	20	39	33	19	36	36	30	39	38	35	37	35	21	30	29		26	26		21	10		15		49.2
36	05/16/99	I-8	Ambient	Base	31		34	34	28	37	36	31	38	37	29	35	30	14	31	31	16	31	30	23	28	28	16	25	25	11	30	36	24	23	20		16		46.5
36	05/17/99	I-4	Ambient	Base	36	19	38	37	17	37	39	31	40	36	22	39	34	22	36	35	24	35	34	24	32	32	19	27	27	13	33	26		24	14		14		48.8
36	06/15/99	Post-fled.	Ambient	Base	31		33	34	20	35	34	28	37	33	26	35	30	17	31	30	6	30	29	19	28	28	19	26	27	30	35	37	33	28	15		17	9	46.3
36	06/15/99	Post-fled.	Ambient	Cavity	30		34	35	23	35	35	26	36	33	32	37	36	42	35	32	20	31	30	33	30	29	27	26	26	16	31	29	17	20	12		15		47.8
37	05/13/99	I-5	Ambient	Base	42	38	41	40	36	40	37	27	38	34	23	38	34	23	35	33	22	35	32	25	32	31	24	29	28	5	26	24	4	18	13	11	16		50.0
38	05/02/99	I-9	Ambient	Base	32	28	37	36	32	38	39	35	39	39	33	36	33	30	35	33	24	34	32	27	31	30	18	26	26	24	26	22		17	11		17		48.5
41	05/28/99	I-5	Ambient	Base	32	26	36	34	18	37	37	39	39	36	23	38	33	16	34	33	18	33	32	25	30	31	13	27	28	13	34	34		20	14		16		47.9
41	06/01/99	I-7	Ambient	Base	35		38	37	29	39	39	27	40	37	26	40	36	22	37	36	19	36	35	25	33	32	18	29	30	22	30	29	34	27	17		18		49.5
41	06/02/99	I-8	Ambient	Base	37		39	37	33	40	39	36	42	38	26	40	36	12	37	36	21	35	35	29	33	33	23	30	29	10	32	31	14	24	16	24	16		50.2
41	06/04/99	I-10	Ambient	Base	32	23	35	34	33	39	40	41	42	39	35	36	31	20	31	31	14	31	30	24	29	28	21	27	27	18	26	23	24	23	14		15	2	49.0
44	04/21/99	I-2	Ambient	Base	33	33	37	41	36	40	42	41	40	39	36	38	35	23	33	32	22	32	31	23	30	29	19	26	25	12	24	22		17	11	1	16	5	50.2
44	04/27/99	I-8	Ambient	Base	33	22	38	38	27	38	38	33	42	39	29	40	36	29	37	36	22	36	34	26	33	32	21	29	28		28	28		21	14		16		49.7
47	06/04/99	Post-fled.	Ambient	Base	35		38	37	25	38	37	16	40	37	23	40	36	22	36	35	22	35	34	25	33	32	21	28	28	12	30	26	20	21	13	16	17		48.8
47	06/04/99	Post-fled.	Ambient	Cavity	38	22	38	37	18	39	36	28	40	36	17	39	36	24	36	36	20	35	33	26	33	32	21	28	28		29	25		21	12		15	5	48.8
48	06/01/99	Post-fled.	Ambient	Base	34	27	38	38	34	38	37	31	38	36	32	40	34	23	34	33	22	34	33	27	32	31	21	28	28	5	30	30	18	21	13		16		48.6
48	06/01/99	Post-fled.	Ambient	Cavity	35	27	39	37	35	38	37	31	38	36	41	50	51	36	36	35	22	33	33	24	32	31	22	29	28		27	22		18	11		15	5	54.8
51	04/29/99	N-2	Ambient	Base	31	23	39	40	32	39	42	38	41	42	29	39	36	23	36	35	24	35	34	28	34	32	18	30	29		30	27		21	13		16		50.6
56	04/15/99	Inactive	Ambient	Base	43	43	45	43	41	46	44	45	44	45	44	41	38	28	36	35	28	37	36	30	35	33	24	29	29		28	24		19	11		14		55.1

Col.	Date	Nesting Phase Day	Event Type	Mic Pos.	Band LEQ (dB) at 1/3 Octave Spectrum Center Frequencies (Hz) 10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	Calc. Overall LEQ
56	04/15/99	Inactive	Ambient	Cavity	50	47	49	49	46	47	44	41	43	44	44	46	49	57	46	41	32	37	36	29	35	34	24	31	30		29	25		20	14		15	4	60.6
57	06/02/99	Post-fled.	Ambient	Base	33	22	37	34	24	36	35	25	37	34	20	37	33	20	33	32	13	32	32	25	30	30	19	27	27	18	28	25	25	35	25	26	23	16	46.8
57	06/02/99	Post-fled.	Ambient	Cavity	32	20	35	33	25	36	35	13	37	33	21	37	32	24	33	32	19	31	30	23	29	29	18	27	27		27	25		18	11		15	1	45.9
61	05/28/99	N-3	Ambient	Base	34	27	36	37	34	37	37	27	38	36	36	38	33	34	37	33	18	32	31	23	30	29	22	27	28	24	31	30	34	32	17		16		48.3
67	04/28/99	I-4	Ambient	Base	39	41	38	41	45	41	41	42	41	39	34	37	34	22	33	33	24	32	31	27	32	32	31	31	35	31	33	38	20	21	14	11	13		52.3
70	05/20/99	I	Ambient	Base	44		46	47	32	48	45	36	49	45	34	49	45	33	45	44	28	44	43	32	41	41	29	38	38		38	37		30	24		26	9	57.7
71	06/07/99	Post-fled.	Ambient	Cavity	55	56	57	53	51	48	46	44	42	40	38	41	37	24	36	35	22	35	34	27	33	32	26	29	29		27	25		19	13		14		62.4
71	06/07/99	Post-fled.	Ambient	Base	40	37	40	35	30	40	36	29	38	34	27	39	35	25	36	35	24	35	34	26	32	32	21	30	29		27	27		18	9		14		49.2
73	05/13/99	N-8	Ambient	Base	35	34	39	39	36	39	40	38	40	38	27	38	34	20	34	34	22	33	33	25	31	31	18	27	27		27	25		19	14		16		49.6
75	06/07/99	Post-fled.	Ambient	Base	37	31	38	37		38	40	38	40	37	25	39	35	21	37	36	26	37	36	29	35	34	23	30	30	20	32	29	18	27	18	17	19	10	49.9
75	06/07/99	Post-fled.	Ambient	Cavity	37	26	40	37		38	37	19	40	36	23	39	37	16	36	35	22	35	34	28	33	32	19	29	28		28	27		20	13		15		49.0
80	05/16/99	Egg laying	Ambient	Base	37	35	35	35	23	37	34	18	37	32	20	37	33	22	34	34	25	36	34	27	32	31	22	29	29	25	27	27	27	21	12		14		47.4
80	05/28/99	N-0	Ambient	Base	34		36	37	31	42	41	37	40	37	25	38	34	22	34	33	15	33	32	27	31	30	19	28	28	27	38	33	28	26	23	18	20		49.7
82	04/29/99	I-8	Ambient	Base	33		39	37	28	40	40	32	42	36	29	40	36	25	37	36	22	36	34	26	32	32	19	30	29	2	29	29		23	17		17		49.7
82	05/28/99	N-0	Ambient	Base	38	36	37	36	32	37	40	31	38	33	22	37	33	23	34	33	16	33	32	23	30	30	16	29	32	24	32	27	36	34	18		17	2	48.7
83	05/02/99	I-2	Ambient	Base	40	39	40	40	38	39	40	38	40	41	38	35	32	20	32	32	26	36	37	35	35	33	23	28	27	12	25	22		16	9		12	0	50.9
83	05/19/99	I-2	Ambient	Base	37	19	37	37	29	38	37	31	39	36	26	38	34	20	35	33	20	34	32	25	31	31	26	27	28		29	25		21	13		15		48.0
83	06/23/99	Post-fled.	Ambient	Base	31	23	37	36	36	40	40	36	39	38	40	37	34	21	33	32	14	32	31	21	31	32	23	29	31	23	35	33	2	22	14		15		49.5
83	06/23/99	Post-fled.	Ambient	Cavity	32	31	37	38	33	39	38	32	38	39	46	52	48	40	36	34	23	33	34	33	34	34	21	29	30	18	33	25		19	12		13	1	55.3
87	06/03/99	Post-fled.	Ambient	Base	35		39	37	24	40	40	36	44	42	38	40	36	20	36	35	22	36	34	26	33	32	23	29	28		28	26		20	13		16		51.0
87	06/03/99	Post-fled.	Ambient	Cavity	37	24	38	35		39	36	24	40	36	22	40	35	23	37	35	24	35	35	24	33	32	20	28	28		27	24		20	13		16	2	48.8
88	05/28/99	Incubation	Ambient	Base	36	29	37	35	27	38	36	23	37	34	23	36	32	15	32	32	11	31	30	20	29	28	10	28	29	26	30	26	20	39	21		18		47.4
88	06/18/99	Post-fled.	Ambient	Base	38	34	36	34	31	37	35	31	38	34	25	35	30	16	32	32	25	35	34	30	32	30	20	28	27	13	29	27	23	24	19	4	27	23	47.5
89	04/28/99	I-4	Ambient	Base	37	38	40	41	43	41	42	40	41	40	36	37	33	22	31	31	15	31	31	24	29	29	21	28	30	26	31	36	33	30	24	23	21	9	51.5
103	05/12/99	N-2	Ambient	Base	46	33	49	45	38	49	48	33	51	48	37	51	46	28	45	45	24	44	43	35	42	41	29	40	40		42	40		31	24		28	11	59.3
103	05/12/99	N-2	Ambient	Base	47		48	47		49	47	37	50	46	29	51	47	34	47	46	32	46	45	34	43	43	31	39	38		41	36		31	27		28	8	59.4
103	05/13/99	N-3	Ambient	Base	44	37	47	44	37	48	46	32	49	45	37	48	44	28	44	43	27	43	43	35	41	40	32	37	37		38	35		29	22		25	10	57.4
103	05/17/99	0	Ambient	Base	54		57	54	45	56	56	47	57	53	40	57	51	34	52	51	36	50	50	45	48	48	38	48	48	24	48	49		36	29		33		66.2
107	06/17/99	Post-fled.	Ambient	Base	39	34	39	38	28	39	37	28	40	36		40	35	26	38	37	29	39	37	29	35	34	23	30	29		28	27		22	13		17		50.1
107	06/17/99	Post-fled.	Ambient	Cavity	57	57	54	53	50	48	47	43	43	40	36	42	50	49	40	39	28	38	37	39	40	37	26	32	31		28	26		20	13		16		62.7
112	06/09/99	N-3	Ambient	Base	35	34	37	39	37	39	39	39	40	40	37	36	32	20	32	31	20	31	30	23	29	29	19	26	25	13	27	24	19	31	17		19	3	49.6
118	06/16/99	N-12	Ambient	Base	32	32	37	35	32	36	36	35	39	38	31	36	32	20	31	31	12	30	30	17	28	28	13	25	25	7	27	24	18	23	14		15		47.2
118	06/18/99	N-14	Ambient	Base	45	45	45	43	40	40	39	30	40	36	22	39	34	21	37	37	33	41	40	38	39	37	28	33	32		29	27		22	13		17	0	53.7
118	06/22/99	N-18	Ambient	Base	33		36	35		37	35	19	38	34	23	37	33	19	33	32	14	32	31	21	29	29	20	27	27		30	33	35	26	16		16		47.0
120	05/16/99	I-4	Ambient	Base	34	24	36	35	26	37	35	31	37	33	22	37	32	16	33	33	22	32	31	22	30	29	13	27	27		27	25	6	28	12		15		46.6
120	05/17/99	I-5	Ambient	Base	36		37	36	21	38	35	##	39	36	25	39	35	20	36	34	21	34	33	17	31	32	25	28	28	17	34	31		23	16		14	1	48.2
122	05/11/99	I-10	Ambient	Base	34	21	35	34	26	36	36	31	36	33	23	35	31	19	32	31	19	33	31	25	30	29	16	25	25		26	24	3	24	14		14		45.9
122	05/11/99	I-10	Ambient	Base	34	21	35	34	26	36	36	31	36	33	23	35	31	19	32	31	19	33	31	25	30	29	16	25	25		26	24	3	24	14		14		45.9
122	05/13/99	N-1	Ambient	Base	37	32	37	36	33	38	37	31	38	35	23	37	33	23	34	34	22	33	32	23	31	31	19	28	26	-5	26	24		19	11		13		47.9
127	06/03/99	Post-fled.	Ambient	Base	46	49	48	49	51	51	50	48	48	53	51	49	46	44	47	44	42	43	42	40	40	38	31	38	40	40	40	37	36	41	30	23	30	15	61.6
127	06/03/99	Post-fled.	Ambient	Cavity	36	30	39	35	26	39	36	23	40	36	38	46	55	44	40	38	26	36	35	32	35	34	24	31	31		28	26		19	11		15		56.9
129	05/16/99	I-10	Ambient	Base	30		33	32	27	36	39	37	40	37	31	36	31	18	32	31	17	33	32	26	31	29	17	27	29	23	31	29	14	18	13		16		47.4
129	05/24/99	N-7	Ambient	Base	51		53	51		56	53	45	56	53	40	56	52	39	52	51	37	51	49	44	48	47	34	44	44		45	45		40	29		31		64.8

Col.	Date	Nesting Phase Day	Event Type	Mic Pos.	Band LEQ (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																		Calc. Overall LEQ
					10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	
129	06/15/99	Post	Ambient	Base	33	22	35	35	33	38	34	28	36	33	23	35	30	5	31	30	17	30	29	18	28	28	9	24	25	11	28	28	34	30	27	23	21	9	46.2
129	06/15/99	Post	Ambient	Cavity	29	23	35	34	35	37	34	21	35	32	25	35	36	44	36	32	18	31	30	22	29	29	15	26	25		26	24	10	20	11		16	2	48.3
130	06/09/99	Incubation	Ambient	Base	35	37	38	41	42	42	41	40	42	39	33	36	31	17	32	32	17	31	30	21	29	29	18	26	25		26	26	10	23	15		16		50.8
132	05/11/99	I-5	Ambient	Base	42	45	45	42	40	39	38	35	37	34	27	35	31	23	34	35	34	39	38	36	35	33	22	28	28	18	27	28	23	24	15	5	15		52.3
132	05/13/99	I-7	Ambient	Base	33	22	35	35	13	37	37	37	38	37	30	38	35	33	38	36	26	35	34	27	33	31	15	28	27		26	24		18	14		15		48.5
134	06/15/99	I-7	Ambient	Base	34	25	39	39	31	39	39	27	41	40	29	40	36	24	36	35	19	34	33	28	32	32	17	29	28		28	28		21	14		15		49.5
135	06/09/99	Incubation	Ambient	Base	36	40	39	42	43	46	45	44	44	43	39	37	33	18	31	31	15	31	30	20	29	28	14	26	26	7	29	29	23	25	14		15	2	53.5
137	05/18/99	Pre-nest.	Ambient	Base	36	22	37	36	32	39	39	38	41	38	31	38	35	32	37	34	18	34	32	24	31	31	22	27	28	7	31	29	22	21	12		16		49.4
137	05/28/99	I-8	Ambient	Base	36	25	39	37	28	39	39	34	41	38	28	39	36	21	35	34	18	34	33	20	32	31	24	29	29		29	28	16	26	16		16		49.3
141	05/16/99	N-5	Ambient	Base	42	41	40	39	32	37	37	27	38	35	24	37	33	16	34	33	18	33	32	23	31	31	21	28	27		31	29	10	20	12		14		49.5
143	04/21/99	I-6	Ambient	Base	29		37	34	13	37	36	19	38	34	21	37	33	15	33	33	19	31	31	22	29	29	21	28	28	15	28	27		19	11		16	3	46.5
151	06/14/99	Post-fled.	Ambient	Base	38		41	38		41	40	29	43	40	24	42	37	26	39	37	20	37	36	25	35	34	20	32	31		33	31	19	32	23	26	20		51.3
151	06/14/99	Post-fled.	Ambient	Cavity	47	45	44	41	35	41	40	32	41	41	32	46	45	32	39	37	23	37	36	30	35	34	24	32	31		30	29		23	14		16		54.3
159	04/29/99	Egg laying	Ambient	Base	31		37	39	26	37	37	28	40	38	29	39	35	23	35	34	22	35	33	22	32	32	22	28	31	30	32	28	14	23	11		14		48.7
159	05/06/99	I-5	Ambient	Base	37	32	39	40	39	42	42	42	45	41	41	42	36	24	35	34	20	34	34	24	32	32	22	30	29		29	30	29	25	14		14		52.5
159	05/21/99	N-9	Ambient	Base	42	39	39	38	25	39	36	20	40	36	23	40	35	22	37	36	25	36	35	29	33	32	25	29	29		31	27		22	12		16	3	50.2
159	06/17/99	Post	Ambient	Base	32	15	36	35	32	37	36	33	38	37	30	36	35	29	33	33	22	32	30	22	28	28	17	25	26	5	27	24	15	27	16	14	16		47.1
159	06/17/99	Post	Ambient	Cavity	37	34	37	37	33	36	36	34	39	38	40	42	57	50	37	35	27	32	32	26	31	30	18	28	27	13	27	23		21	11		14		58.5
162	06/03/99	Post-fled.	Ambient	Base	34	34	40	36	33	39	43	44	43	45	40	43	38	28	36	35	24	34	34	30	34	32	18	29	28		30	24		18	7		14		52.7
162	06/03/99	Post-fled.	Ambient	Cavity	40	32	37	31	35	38	41	34	42	45	46	47	58	57	40	38	31	36	38	45	38	36	26	31	32	24	29	26		18	12		12		61.3
163	05/18/99	I-6	Ambient	Base	34	25	37	35	32	37	34	17	38	35	29	38	34	21	35	34	23	34	33	26	32	31	10	27	26		27	24		20	12		14		47.3
165	05/26/99	I-1	Ambient	Base	38	37	39	39	45	39	39	33	40	37	30	40	36	23	36	35	23	35	34	25	33	32	24	29	28	8	28	27		21	14		17		51.2
165	05/26/99	I-1	Ambient	Cavity	32		38	37	24	38	37	27	40	36	26	39	35	23	36	35	20	34	33	28	32	32	22	29	29		28	28		21	14		15		48.5
172	06/04/99	Post-fled.	Ambient	Base	37	22	39	36	20	39	38	39	42	38	26	39	35	21	37	35	17	35	34	25	33	32	23	29	29	14	28	27	20	24	22	24	26	20	49.7
172	06/04/99	Post-fled.	Ambient	Cavity	37		39	35	18	38	36	21	40	37	24	40	35	24	36	35	18	35	34	28	33	32	19	29	28		28	27		19	13		16		48.7
174	04/28/99	I-5	Ambient	Base	32		33	35	39	37	38	38	38	35	26	36	34	28	33	31	14	31	30	22	30	31	30	30	27	16	28	28	20	20	14	2	16		47.9
174	05/03/99	I-5	Ambient	Base	33	23	36	36	31	38	36	32	37	34	26	36	30	17	31	30	17	30	29	21	29	29	18	29	31	29	35	29	26	20	12		15		47.0
174	06/01/99	N-22	Ambient	Base	38	29	40	39	26	39	38	22	39	37	26	40	36	24	36	35	21	35	34	28	33	32	27	30	29		28	27		22	14		16		49.4
176	05/28/99	N-9	Ambient	Base	36		39	37	21	39	36	26	38	35	19	39	34	19	35	34	20	35	33	25	32	32	19	28	29	10	30	27	27	39	20		15		48.8
177	05/16/99	N-2	Ambient	Base	37	37	39	37	31	38	37	31	40	38	31	38	33	23	34	34	22	33	32	25	31	31	16	28	28	11	27	25		19	10		12		48.7
179	06/07/99	Post-fled.	Ambient	Cavity	45	46	43	41	33	39	37	29	39	35	30	40	44	46	38	36	22	36	34	25	34	33	23	31	30	20	28	27	17	19	16	7	16	5	53.6
179	06/07/99	Post-fled.	Ambient	Base	36	18	38	34		38	35	15	39	36	17	39	35	22	36	35	21	35	34	22	32	32	21	31	34	35	36	33	27	23	17		16		48.8
183	06/07/99	Post-fled.	Ambient	Base	34		38	36	21	38	37	20	39	36	21	39	35	23	35	35	20	36	35	27	34	33	23	31	30	9	33	32	15	21	15	5	16		48.7
183	06/07/99	Post-fled.	Ambient	Cavity	36		38	35	27	39	37	24	40	36	24	40	37	22	36	35	21	34	34	24	32	31	20	29	28		30	29		20	13		15		48.6
189	04/23/99	I-1	Ambient	Base	45	44	43	44	39	41	41	31	41	38	26	40	37	26	37	36	22	36	35	30	34	34	25	31	30	18	29	26		21	14		17	2	53.0
189	04/27/99	I-5	Ambient	Base	35		42	39	33	41	38	32	40	39	26	41	36	26	36	35	20	36	34	27	33	33	15	28	28		28	27		21	16		14		50.2
189	04/29/99	I-7	Ambient	Base	35	26	36	40	32	41	43	40	39	37	35	39	35	26	35	34	22	34	33	24	31	31	21	28	26		26	24		18	13		15		50.2
189	05/03/99	N-0	Ambient	Base	35	28	42	41	37	40	40	38	42	40	38	38	35	25	35	34	21	34	33	26	32	32	24	30	29	16	30	26		18	12		15		51.0
194	04/13/99	Pre-nest.	Ambient	Cavity	33	28	38	44	28	36	37	31	39	37	35	40	43	48	38	36	23	35	33	27	33	32	22	29	28	8	28	24		18	12	15	16	3	52.5
194	04/13/99	Pre-nest.	Ambient	Base	35	25	40	46	35	40	43	41	41	38	30	39	35	20	35	34	19	35	33	26	32	32	16	28	27		29	26	4	19	16		16	1	51.7
194	05/17/99	N-21	Ambient	Base	31		37	35	16	38	37	27	39	36	18	39	34	18	34	33	15	33	32	27	30	30	18	29	29	15	31	30	34	26	19		15		47.8
203	06/16/99	Non-nest.	Ambient	Base	36	32	39	39	39	39	41	41	40	43	40	37	34	29	35	32	17	31	30	19	29	28	12	26	26	8	28	24	10	23	12		16	4	50.7
205	06/02/99	Post-fled.	Ambient	Base	38	16	37	35	20	37	34	22	38	34	24	38	33	20	34	33	20	34	32	25	30	30	17	27	27	20	31	28	24	23	19	23	18	7	47.3
205	06/02/99	Post-fled.	Ambient	Cavity	36	29	37	35	31	36	34	20	37	35	22	37	33	21	34	33	21	33	32	24	31	31	22	28	27	11	31	30	28	21	14		15		47.2

Col.	Date	Nesting Phase Day	Event Type	Mic Pos.	Band LEQ (dB) at 1/3 Octave Spectrum Center Frequencies (Hz)																																	Calc. Overall LEQ
					10	13	16	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	
206	06/14/99	Post-fled.	Ambient	Base	43		45	42	36	46	45	35	48	47	37	47	43	30	44	42	28	42	40	28	39	39	30	37	36		36	35	23	46	48	34	26	5	57.4
216	06/18/99	Post-fled.	Ambient	Base	47	45	45	44	38	40	40	33	41	38	29	40	36	23	37	36	26	38	37	32	36	35	23	31	31		29	27		25	15		17		53.7
216	06/18/99	Post-fled.	Ambient	Cavity	60	60	61	56	51	49	47	44	43	41	40	45	53	40	39	37	25	37	36	32	38	37	25	31	31		28	26		20	14		16		66.5
216	06/22/99	I-8	Ambient	Base	34	28	39	36	25	36	36	19	37	34	24	37	32	18	33	33	17	32	31	24	29	29	18	26	26	4	28	29	30	26	16		15		47.1
218	04/23/99	I-4	Ambient	Base	53		54	53		54	52	31	56	52	44	57	52	40	53	51	38	51	50	36	48	47	40	43	42		43	39		38	32		32	18	64.8
227	06/03/99	Post-fled.	Ambient	Base	39	33	39	39	34	39	39	25	40	37	25	40	35	24	37	36	25	37	36	28	34	33	17	29	29		29	26		21	15		17	3	49.9
227	06/03/99	Post-fled.	Ambient	Cavity	38	27	38	37	23	39	37	22	40	35	25	40	36	25	36	35	22	35	34	28	33	32	20	29	28		28	26		20	13		17		48.9
271	06/03/99	Post-fled.	Ambient	Base	37	34	39	39	36	40	39	31	42	39	28	40	36	29	37	36	23	35	34	22	33	32	26	31	31	30	31	28	18	24	17	13	19	8	50.4
294	05/28/99	N-6	Ambient	Base	35	26	38	36	34	39	40	33	40	37	29	39	34	23	35	34	20	34	33	23	32	31	21	29	29		29	27	23	36	20	22	17	8	49.2
296	06/20/99	N-9	Ambient	Base	34	25	38	38	26	36	33	15	37	33	18	37	32	19	34	33	16	33	32	22	30	30	21	27	27	18	32	27	19	22	13		13	1	47.0

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13. ABSTRACT *(Maximum 200 words)*

It is estimated that nearly a quarter of the remaining Red-cockaded Woodpecker (RCW) population resides on military installations in the southeastern United States. Such a close association has raised questions about the interaction between training and the conservation of Red-cockaded Woodpeckers on military land. Increased importance has been placed on determining how noise affects these species. This report presents second year results of a multiyear study to determine the effects of certain kinds of training noise on the endangered Red-cockaded Woodpecker.

Preliminary data suggest that: measured levels of experimental noise from .50-caliber blank fire and artillery simulators did not affect RCW nesting success or productivity; Red-cockaded Woodpecker flush frequency increased as stimulus distance decreased, regardless of stimulus type; woodpeckers returned to their nests relatively quickly after being flushed; and noise levels in Red-cockaded Woodpecker nest cavities were substantially louder than levels recorded at the base of the nest tree.

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